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Polar bear and her cub prowl Hudson Bay area at sunset; humans seek to coexist (p. 70)

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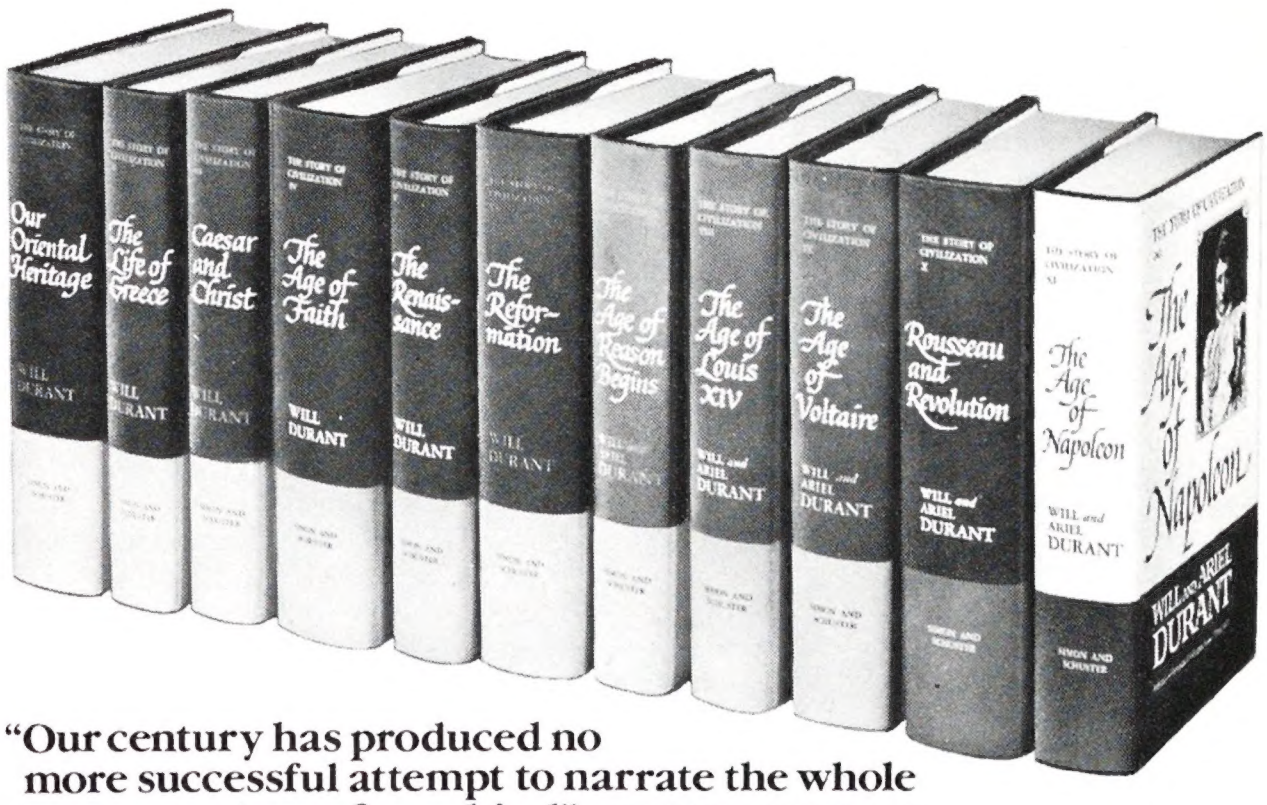

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Left to right: Bob Toole, roustabout Jacob Kuhoktak, and the freezer.

Gulf Oil Corporation

Secretary Ripley's comments

The view from the castle

However the Panama Canal Treaty debate is resolved, scientific work there will still be valuable

Now that the United States has become aware of the Panama Canal in a way that has reawakened many historic memories, it is useful to remind our Smithsonian Associates of the Institution's own Tropical Research Institute in Panama (SMITHSONIAN, August 1975). It consists of the world-famous Barro Colorado Island in Gatun Lake, in the middle of the Isthmus of Panama, perhaps the most valuable piece of scientific real estate that the Smithsonian possesses. Some of the earliest ecological studies in biological field research were pioneered here. During the past five years, we have refined our knowledge to a degree of preciseness unparalleled in the tropics.

For the Smithsonian the present news is most encouraging. Whatever the politics of the Canal ownership may be, and however the debate resolves itself between the executive and legislative branches of our government, and whatever the repercussions on the government of Panama and its neighboring states, as well as on Americans living in the Canal Zone, the Tropical Research Institute is blessedly endorsed by all sides. Under negotiated agreements Barro Colorado Island will be preserved as a Nature Monument under the 1940 Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere.

The Smithsonian Tropical Research Institute (STRI, as we call it) is recognized as the custodian of the monument for an initial five-year period after treaty ratification, with the option of continuing at our request. Finally, a separate agreement between the government of Panama and STRI confirms our continued use of lands and facilities for research in contiguous areas of the country, beyond the limits of the 6,000-acre island. Thus, over the years, we have earned the confidence and enthusiasm of our colleagues in Panama and neighboring countries.

Why should we study the tropics? For one thing, a great deal of the recent evolutionary, environmental and ecological research reported in scientific journals has been conducted in the tropics, and a high proportion of these studies has been connected in some way or other with STRI. There is sound opinion, worldwide, that the tropics provide the best environment for studying Man and the evolution of animal and plant species on the planet. For one thing, tropical zones of the world may have longer undisturbed sequences than temperate zones; they may also lack the disruptions caused by the effects of Pleistocene glaciation.

A few years ago there was considerable publicity about the development of a sea-level canal, a subject that has been revived off and on since the turn of the century. Recently, President Carter mentioned a reopening of such studies. The present Canal passes through fresh water in its system of locks and the lake. STRI's marine laboratories at either end of the Canal give the Smithsonian a crucial perspective on the issue. Studies at our biological laboratories have shown that the Caribbean and the Pacific are so different in physical and biological constitution that the intermingling of organisms from the two oceans by a sea-level canal could have unpredictable results. At the very least, the course of our marine research at STRI in the past ten years has helped to collect information which could prove vital in making such long-range decisions. This information is unique, and would not be available had STRI not existed.

Now STRI has added important objectives, many of them crucial for the future understanding of Man's role in the tropics. Much of the United States' shrimp supply comes from the seas near Panama. Bananas, sugar and beef are other major exports of the area. Essential information and fundamental data about tropical aquaculture, as well as tropical agriculture, are available for future study. The indiscriminate use of insecticides, herbicides and the release of radioactive atmospheric pollutants produce worldwide effects, which have been measured only recently in the tropics. In the same way, the vast and continual destruction of tropical forests for agriculture and timber is producing new and irreversible changes in the weather of the Earth—temperate zones as well as the tropics. The effects must be monitored, and that can best be accomplished from a solid base of years of prior measurements. Here STRI's record is unmatched.

As the terrestrial environment changes and deteriorates, so pollution of coral reefs in the tropics, another subject of great concern to the Smithsonian center, may have profound and as yet unpredictable effects on ocean productivity. The complexity of the interrelationships of plant and animal species in the tropics is one of the most profound enigmas in present-day biology. There are lessons to be learned from an understanding of the tolerance for competition and for stress on life at all levels. Human growth rates and economic viability may be dependent on our better understanding of the natural rates of change that are imposed on the tropical environment.

From my own point of view as a biologist dedicated to research on the tropics, I find the continuation of our Institute in the Isthmus of Panama to be of exceptional scientific and intellectual importance—especially if our efforts are directed toward the preservation of life itself.

S. Dillon Ripley

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Around the Mall and beyond

Pictured below is a Smithsonian staff member at work. He is, naturally, Kjell Sandved in one of his favorite environments, where he can intrude peacefully upon the lives of small creatures and catch them with his camera at their least inhibited moments. Last month this column mentioned Kjell's remarkable film, *Curious Creatures and Mini-monsters,* which demonstrates with great beauty and often with humor the results of Kjell's activities as a giant Peeping Tom.

My favorite episode in the film is the meeting of the baby bug and the katydid. Now everyone knows what a katydid is like—sort of feckless—but this hemipteron is a youngster of incredible stubbornness. And here it comes along a twig, plodding steadfastly, eyes front, thoughts purposeful. And from the other direction comes a likable, easygoing katydid, sashaying along on those great skinny legs, sloppy and forgetful and easily distracted.

The bug meets the katydid head on and simply does not give a millimeter. The katydid courteously tries to stand aside, loses its balance, slips off the twig, but just saves itself and hangs there upside down. And the bug shoves right on, treading on the katydid's feet, like a shopper headed for the bargain counter, not giving a damn.

And when the rude little creature has gone, blindly pursuing its goal of success and prosperity, the katydid drags itself right side up and catches its breath and looks back at the bug. It has an unmistakable expression: shock mingled with awe. "My God," it says, "who *was* that?"

Kjell's film is playing in Houston's Museum of Natural Science this month, to the delight of all the lucky Texans who get to see it. Then it goes to the Louisville Museum of Science and History for the month of March, and in April to the Children's Museum of Indianapolis. In May it will be seen out in Phoenix at the Heard Museum.

Kjell (pronounced "Shell") was a publisher in Norway when he came to the Smithsonian 18 years ago to dig up some

Kjell Sandved on the job.

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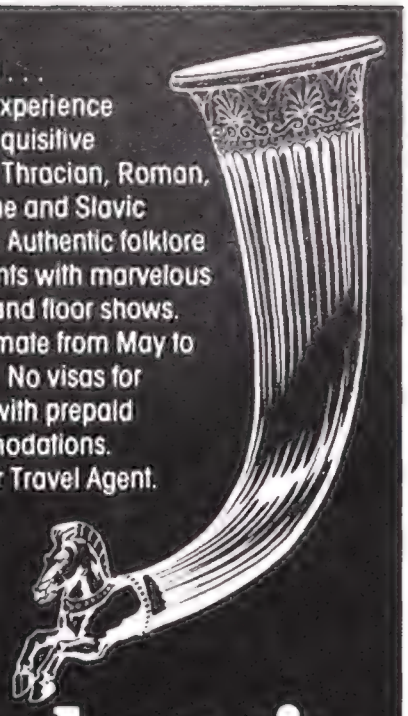

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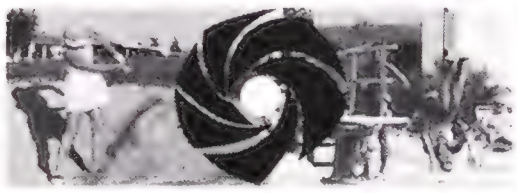

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photographs for a natural history encyclopedia his firm was putting out. He found the files here pretty scanty in the field of natural history, but he was impressed with the work that the Institution's biologists were doing and sort of hired himself out to them as a photographer. Using high magnification still- and motion-picture systems, he can spend happy times up to his neck in a pond or smothered with moths, in order to peer right into the lives of his small subjects. He says he was not a photographer in Norway and so had to teach himself.

Kjell is an engaging enthusiast who counts himself lucky to be doing what he does. He likes to show his film to schools and is very proud of the response it gets from small children: "Thank you for comeing to my school. I Larend a Lot. My fovete insect is the caterpiller. But I like a lots of them. I think insects are insterten. . . ." Since some scientists have trouble with spelling words like "interesting," it may be that this youngster is heading for a bright future at our Department of Entomology.

Sandved's recent book is simply called *Butterflies* and came out in 1976—a marvelous collection of color photographs (SMITHSONIAN, January 1975) with a wise and fascinating text by Jo Brewer, a noted lepidopterist. Here, as in all his work, Sandved likes to bear down to almost excruciating intimacy with compound eyes, wing scales, deceptive eyespots and other details. *Butterflies* is in our museum shops.

While in the mood to plug things, be it known that the shop at the Museum of Natural History is also stocking *Seejeh*. *Seejeh*? you ask. The very same. It's a chess-checkers-type board game with a fascinating history—well, *long*, anyway, because it has apparently been played throughout the Middle East since Biblical times. For a long time, stones bearing the gridwork of a game board have been known to archaeologists, the one that inspired *Seejeh* being a fragment of a grindstone found in the ruins of Har Megiddo, or, to you Biblical students, Armageddon. This stone had a Greek *pi* chipped into its central square, which may have been put there by Greek-speaking mercenaries of the fourth and third centuries B.C. This "Megiddo board" was found by Judith Rosenfeld, an American writer and archaeology buff.

She and her family discovered that Bedouins like to play a board game today which they believe to be very old. They mark out squares on the sand and use pebbles or dried goat pellets as "men," and their game is called *Seejeh* and adapts to the ancient stone "boards." It may or may not be the same ancestral game, but it's fun. Judy got an Israeli firm to manufacture *Seejeh*, and then they introduced it in the States. And if you go buy it at the Natural History museum shop, you'll find that the kids can play, or your visiting genius can tax his intellect with it. By the way, you don't have to use goat pellets anymore.

Of course I'm personally interested in the success of the Smithsonian book, *The Smithsonian Experience*, which is out and selling. I am among many contributors who wrote stuff inside this very spectacular and in some ways offbeat volume. As a gimmick to take advantage of Christmas buying and sell a bunch of books (I'm spilling a lot of commercial secrets here, but what the hell), some of us writers were put in various Smithsonian museum shops to lure buyers with our overwhelming charm and then autograph their books. I drew the Renwick, one of my favorite museums, but not noted for whizbang sales techniques—I mean, you can't see the Renwick featuring a Santa with tots crawling up on his lap to ask for a bit of Sèvres.

Anyway, I arrived, accompanied by a book editor, to help organize the crowd of pushy buyers, and we spent a pleasant hour sitting at a table with *The Smithsonian Experience* spread enticingly out upon it. And people drifted by, all intent on seeing the splendid exhibit devoted to the late Frank Lloyd Wright. Only a limited group was lured by us.

At last the Renwick director, Lloyd Herman, taking extraordinary pity, bought a book which I duly inscribed. And then a shopper, eyes glazed with the wonders of Frank Lloyd Wright, paused, looked at the book and began asking me questions about how it linked up with the exhibit. I told her I was not sure. She said that it *had* to be concerned with design, and she asked if I would *really* sign it. I said that was the idea.

So she bought one. I realized she thought I was Frank Lloyd Wright.

The exhibit that so entranced this woman goes on through July, so by all

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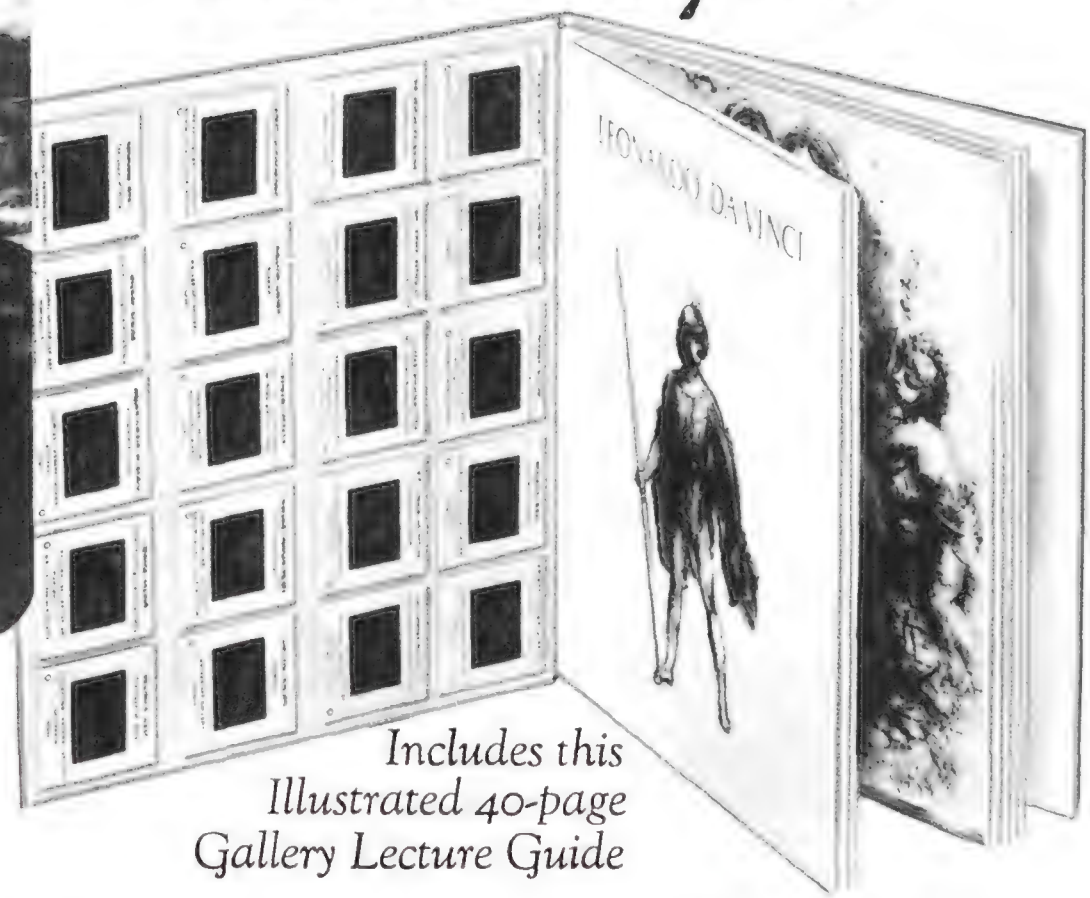

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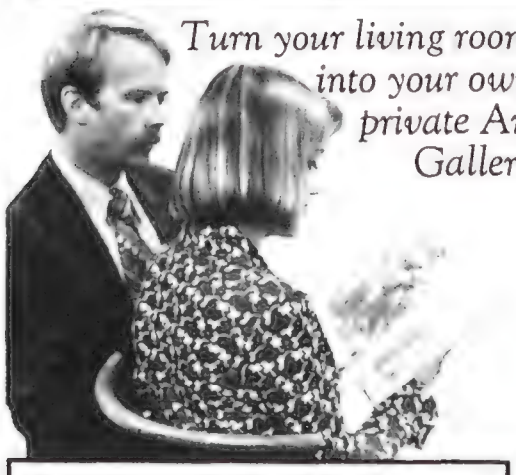

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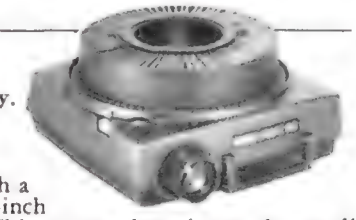

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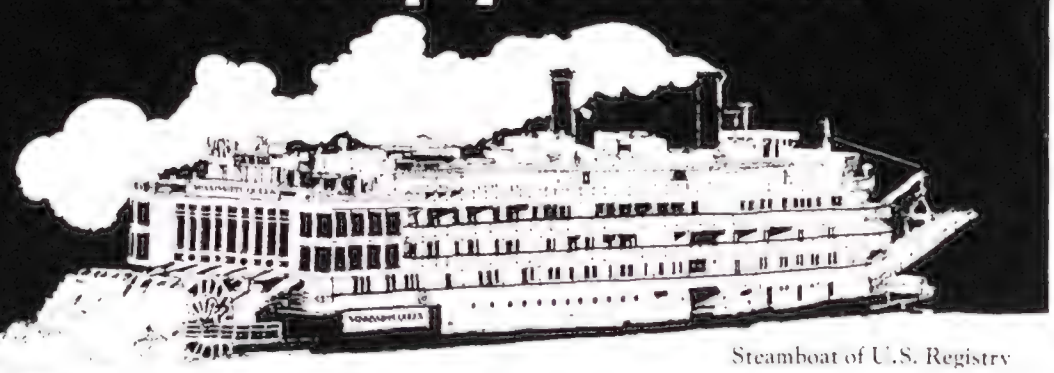

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means drop by the Renwick and see it. The book editor and I took turns sneaking away from our publicity task when the going was especially slow (that is, when Lloyd Herman and the woman weren't there) and we got pretty entranced ourselves. I had never realized how many kinds of design the old maestro took on, aside from buildings. One can see here that he got deeply involved with what went inside the structures that he created. So there are Frank Lloyd Wright wallpaper, stained-glass windows, chairs, tables, and even silver from the Imperial Hotel in Tokyo.

Just two more words about Frisbees and how they work, and then they will go wafting off into the sunset for good, I promise. Our own Mel Zisfein, of the Air and Space Museum and catalyst of the great Frisbee project, was chatting with a Congressman friend and his son recently and learned that the boy was looking for a science project for one of those science fairs that high school students participate in. Mel suggested a wind tunnel to test Frisbees and the lad is working on it already. He won third place last year, so the Frisbees may get even more publicity.

The other point is that Mel received a phone bill from his friend, Professor Eugene Covert, at MIT, following a long conversation about Frisbees. It came to $6.60. Mel immediately dubbed the whole thing a Covert Operation and passed the bill to me. I believe I'll pay it, if only to place this column on an equal footing with NASA and the U.S. Air Force and other billion-dollar agencies.

—Edwards Park

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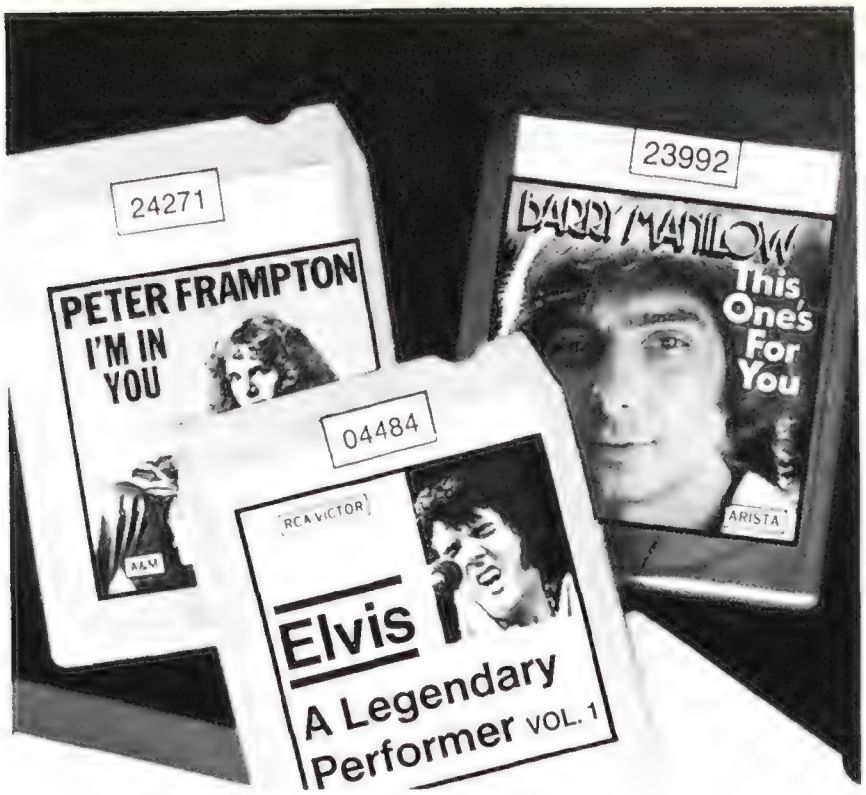

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*This reprint is free for the asking when you subscribe and mention Smithsonian.

Letters to the Editor

Birches

Dear Sir: Many thanks for Charlton Ogburn's December article, "Birch trees are the Graces of our wild forests," and for the accompanying photographs. However, gray birches are gray birches, in New England at least, and not necessarily "little white birches."

James Russell Lowell called the birch the "most shy and ladylike of trees."

Hazel G. Stressenger
Brighton, Massachusetts

Author Charlton Ogburn doesn't think it's fair to call "white" gray, so he made the point of calling the botanists' white birches "big white birches" and their gray birches "little white birches." He is hoping to coin a new lay nomenclature for the commonest birches. Ed.

Dear Sir: Would that I could send Charlton Ogburn a birch-bark valentine, but I have almost forgotten how we Manitoba moppets made them. I remember that we burned on the messages, and we also made folding ones. It has been a long while ago, but they were lovely.

Olive Giambattista
Harrisonburg, Virginia

Alaska

Dear Sir: After reading your article, "Alaska: develop or conserve?" I must conclude with sadness that the past hundred years have left America older but no wiser. In the 1870s and '80s, Congress was deciding the fate of proposed wilderness preserves, such as Yellowstone and the Adirondacks. The issue was a political "hot potatoe" and the conservationists were assaulted by arguments such as that put forth by Representative Lewis E. Payson from Illinois (1886): "I can not understand the sentiment which favors the retention of a few buffaloes to the development of mining interests amounting to millions of dollars." Jack Carlson, quoted in your article, echoes the same sentiments in 1977. Have we learned nothing from history? Experience should have taught us that the value of wilderness cannot be reduced to questions of utility, nor assigned a "market price."

Even if few use the wild preserves, as Alaska's lone Congressman Don Young says, just knowing it exists is immensely important for the rest of us. The exploitation of our last true frontier may bring temporary riches, but it would forever impoverish our spirit and betray our heritage. I hope in years to come we may all laugh at the absurdity of the debate.

Joni Seager
Worcester, Massachusetts

Dear Sir: Alaska's recreational hunters have at least as much right to hunt and fish as do the Natives, and more than the Lower 48 kibitzers who come to ooh, ah and gush.

Bill Davidson
Mandeville, Louisiana

Dear Sir: An overdose of environmental controls can throw our entire economy out of balance. We can no longer afford to waste or misuse the tremendous resource we are fortunate enough to call America's domain.

Alaska contains unknown quantities of gold and antimony, which we now purchase from the Soviet Union and the Republic of China. When we have the opportunity to be free from possible foreign embargoes, what is holding us back? Our people need employment and the challenge and opportunity to forge ahead into the new century. Even if we place ten million people in Alaska, it would not be a drop in the bucket.

Helene H. Armstrong
San Francisco

Dear Sir: Your article on Alaska is beautifully written and illustrated and has the impact of beauty and complexity that proper treatment demands. Author Margot Hornblower and the members of your staff who worked with her all deserve our appreciation for a good job of reporting.

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Ira J. Hutchison, Deputy Director
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Through the Looking-Glass

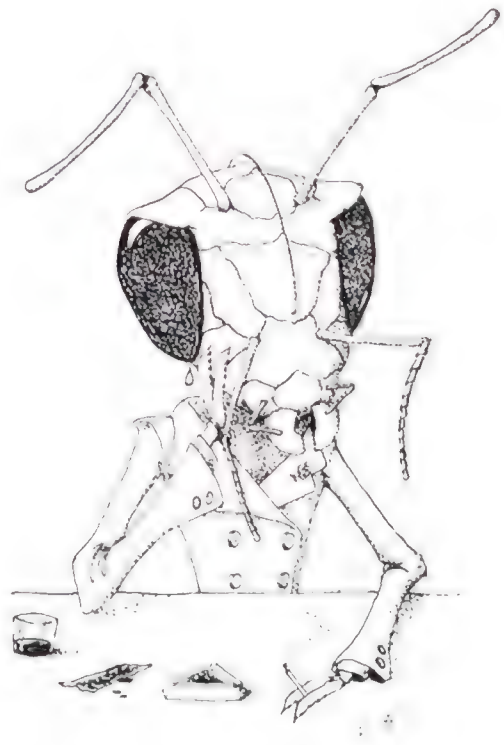
Dear Sir: The suppressed Lewis Carroll "Wasp-in-a-Wig" episode was quite rightly rejected. It's no wonder illustrator John Tenniel didn't like the idea. Though the modern illustrators seem not to have noticed, Carroll's entomology was mixed-up.

To be specific, wasps do not have "hair" —they have only a few setae. So, a wasp would never want a wig. In contrast, bees are usually fuzzy, often golden. A bee, especially a lone, old bumblebee, just might want a wig, but then no bee would say some of the things the wasp did.
Osgood R. Smith
Washington, D.C.
Carroll did not aspire to realism. Ed.

Dear Sir: Ralph Steadman's drawing on the cover would be my choice for a new, complete edition of *Through the Looking-Glass.*
Bob Kling
Cincinnati

Dear Sir: I thought you might like to see my version of the Wasp [below].
Sylvia Stone
Stamford, Connecticut

Dear Sir: I share Sir Hugh Casson's sentiment that "To have a go was irresistible," so I am offering you my Wasp [below].
L. Elliott
Mountain View, California



Factories in space

Dear Sir: I was very much impressed with Richard S. Lewis' article, "Space Prospect: Factories and Electric Power," but I must admit the relative immediacy of space industrialization is startling.
George L. Holbrook
Wolfeboro Falls, New Hampshire

Dear Sir: It is time for SMITHSONIAN to argue the case for protection of outer space in the same vein as your excellent articles on Alaska and the Amazon.
Flawn Williams
Washington, D.C.

Dear Sir: The identification in your author's box should have said I was former editor of *Science and Public Affairs, The Bulletin of the Atomic Scientists.*
Richard S. Lewis
Indialantic, Florida

Siberian mammoths

Dear Sir: The pathetic picture of "Dima," and word that the poor baby will be stuffed, causes me to suggest that the next good mammoth find be freeze-dried for preservation, transportation and research.
Frank Taylor
Former Director General of Museums
Smithsonian Institution

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Signs

Dear Sir: In regard to Wolf Von Eckardt's article on signs, I would like to offer my entry. It was located on a pole at the edge of a parking lot in a local state park. It was at an entrance to a trail, thus permitting no less than five legitimate interpretations! It read as follows:

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Another one which amused me was at the same park, showing a "Beach Closed" sign half covered with snow [below].

Peter E. Black
DeWitt, New York

Book reviews

Dear Sir: Your book reviewer, John F. Warner, in his report on *Sailor Historian: The Best of Samuel Eliot Morison*, describes the people of Marblehead, Massachusetts, as "boisterous, rowdy, independent and proud." My Marblehead lineage prompts me to ask: Of what is the man thinking? "Independent and proud," yes indeed. "Boisterous," not routinely. But rowdy! That is too much. Shame on you, Mr. Warner.

Anne Wheeler
San Francisco

Around the Mall

Dear Sir: As a former executive and member of the board of directors of Tiffany & Company in New York, I naturally knew about the emerald Smithsonian recently

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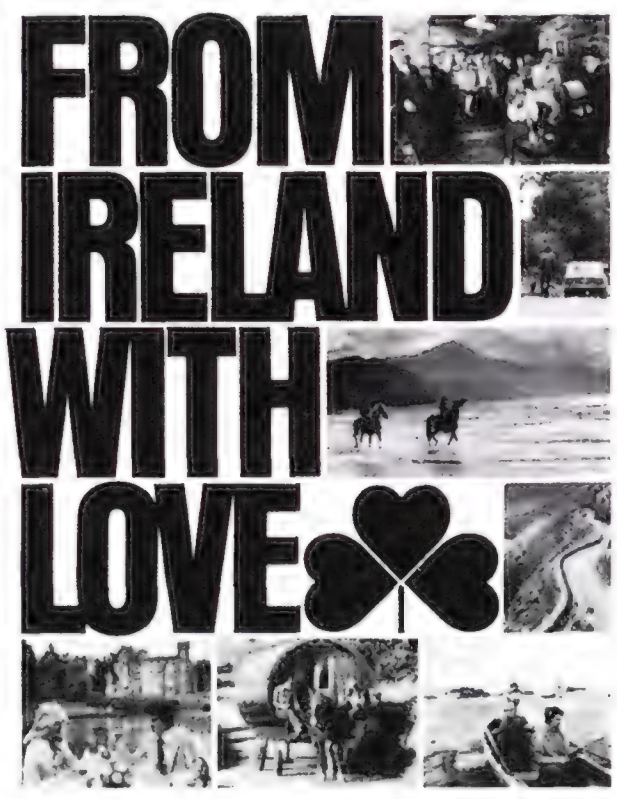

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received as a gift from Mrs. Stewart Hooker. The gem had been acquired by Tiffany prior to World War I. In Tiffany's 1950 Christmas catalog, it was shown in color on the first page, and it carried a price tag of $39,000.

In 1955, Walter Hoving assumed the chairmanship of Tiffany and he was searching for merchandise that could be reduced in price and sold quickly. A substantial reduction was taken off the then figure of $39,000. Shortly thereafter it was sold to Mrs. Hooker, ending a long journey that began with the Sultan of Turkey, Abdul-Hamid II.

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A. E. Alexander
New York City

Teen-age prodigies

Dear Sir: My reaction to Alonso Cady's letter to the Editor in which he states that "biologically males are superior in *reasoning* to females" can best be expressed by that indomitable *Peanuts*' character, Lucy: AAUGH!

Methinks that if Mr. Cady put *his* reasoning ability to work, he might discover that years of conditioning have, until recently, effectively discouraged women from expressing an interest in the traditionally male bastions of "logic and related fields," such as mathematics and science. But the times, they are achanging —now let's see if we can get the word to Mr. Cady.

Sheila Foran
West Hartford, Connecticut

Dear Sir: I am glad to note that Professor Cady, after 40 years of teaching philosophy, has observed that there is a difference between girls and boys.

I have been a girl longer than he has taught philosophy, and I am not yet retired from being one. I have some observations too: girls discovered that logic was not required in order to nurture life, accrue wealth or live creatively and longer than boys. Consequently, they did not clutter finely honed intuitive reasoning with technical hardware. Long live the difference!

Nancy S. Watkins
Winston-Salem, North Carolina

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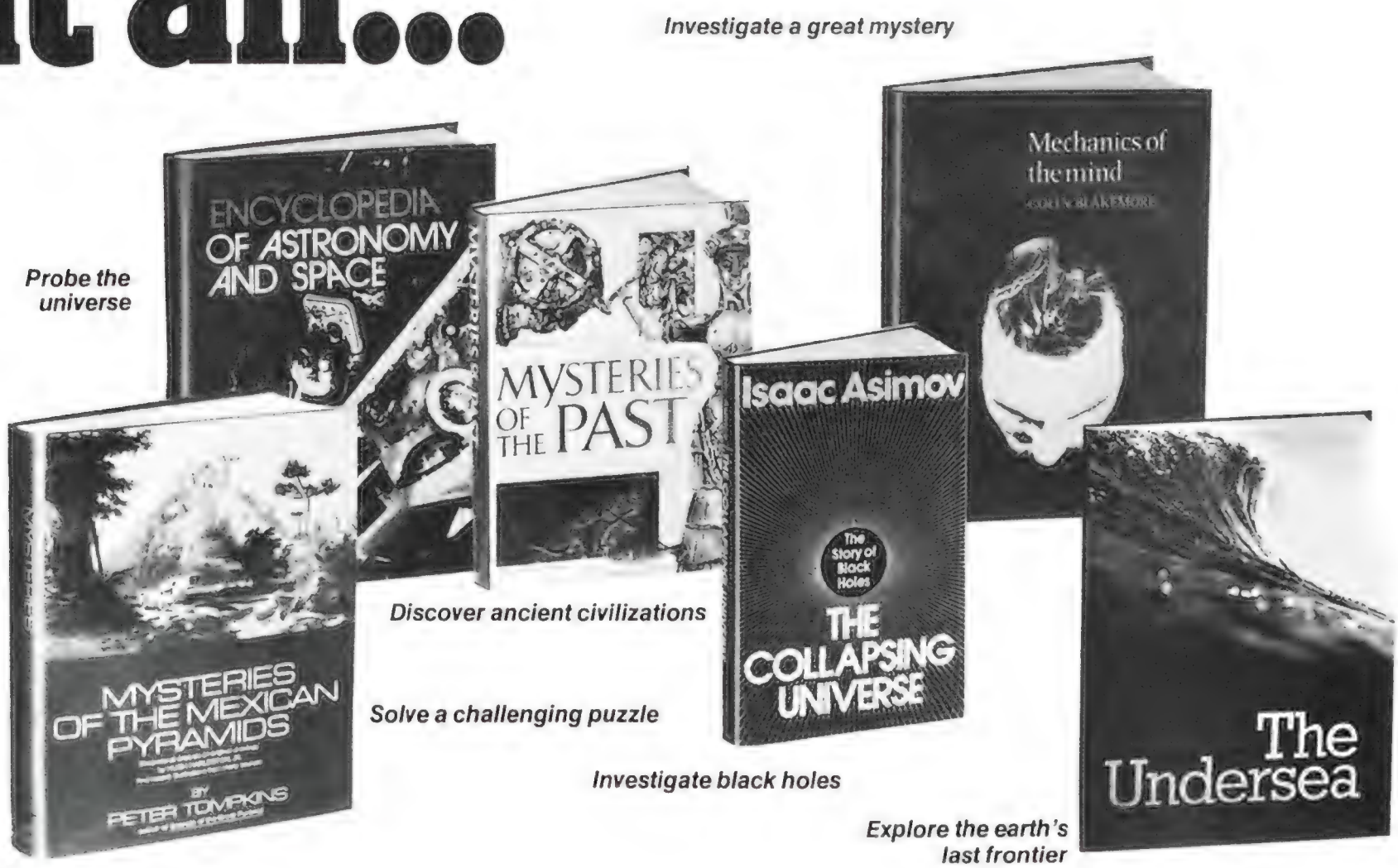

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Phenomena, comment and notes

A dip into trends, fashions and fads of tastemaking in the 'artworld,' and maybe how to keep it in place

Museum of Modern Art, New York. Gift of Mrs. Simon Guggenheim

Among three most admired Picassos: *Girl Before a Mirror,* 1932.

We will visit now for a while with the Wide World of Art, which is not so much wide as it is, so to speak, narrow. Taken down to lower case, it becomes the artworld, and maybe that describes it better. In the artworld, then, there are many galaxies, most of them existing in the eyes of their beholders in different universes directed in differing courses and yet, sadly, frequently in conflict with other proprietors of solar systems: an entire Milky Way of star wars. And if Milky Way reminds you of a chocolate-filled candy bar, so much the better.

In the artworld there are artists, indispensable of course. And then, in no special order, because there is no special order, academics, dealers, collectors, speculators, curators, critics, groupies. And there is us (some of these others might agree) for whom it all is: people who look at art because it makes them feel very fine.

These musings have been brought to a head, mine, by the recent issue of *ARTnews,* celebrating its 75th anniversary. In observance of this event the magazine sent separate survey questions to two groups of people in the artworld. Artists formed one group in a lump, and art historians, museum directors, curators and critics were joined together to form another, a kind of critical conglomerate.

It is, after all, an amusing game with moments of fun for practically anybody. We at SMITHSONIAN, when we were planning the Bicentennial issue which was concerned with things to come rather than those past, toyed around with the idea of projecting the art of the future, but decided to leave that one alone. It became pretty clear that nobody could make any sense of the question. I mean, who could have known in the flowing Fifties that sometime in the Sixties "Non Art" would be, for at least a sputtering moment, the art to look for and that, if you could find it at all, the last place to look was, God forbid, on a wall or in a museum or home or gallery. The best place to look, if you were so inclined, it turned out, was in the artists' heads. There were some who would have liked to ventilate some such heads. Fenestration Art, you might call it. But, so far as we know, this never became a school.

(Conceptualism, however, did become a school, and it was not without pain. There was the conceptualist who, thinking big, decided he would simply sign the whole world, only to be told, to his annoyance, that it was already claimed.)

Some did not reply to the questions and so attained reverse conspicuousness by their reticence. Still, it is a matter of wonder as to who they are. Billy Carter? Did not Jasper Johns immortalize beer cans sculpturally and is not Billy Carter an authority on beer cans? Why was he not asked for his opinion? Or, if he was, why did he not reply? J. Carter Brown? Thomas Hoving? Vincent Price? There is no record of their opinions. Politesse, you say. Very well. Still, one wonders.

Well, to the surveys. *ARTnews* asked

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nearly 100 artists what specific works or artists of the past 75 years they had admired or been influenced by—and why. Then, to the other group, they sent off the question: "Who's overrated now? And underrated?"

Grace Glueck wraps up the conclusion to the artists' survey: "The 20th-century artist most admired by other artists is Picasso, with Matisse, Pollock and Brancusi runners-up, in that order. The works of art that mean the most to artists are *Guernica, Les Demoiselles d'Avignon* and *Girl Before a Mirror,* all by Picasso." Cézanne was the fifth most frequently cited source of inspiration.

Christo, sending his answer in the form of a book on modern art wrapped in Pliofilm and string and bearing the message, "Your answer is inside," once again displays his talent for public relations. In one gesture he has given an influential magazine a work of art, signed; brought attention to the authors of the book, Sam Hunter, an influential art historian, and John Jacobus; and brought attention to the publisher, Harry N. Abrams, Inc., which also happens to be the publisher of a book on Christo. Neat packaging, as they say in the TV world of advertising.

The artists' replies are quite fascinating. Romare Bearden cites Matisse's *Blue Nude,* which he saw first in Paris and which "knocked me out." Red Grooms who, with his crew of assistants, has been phantasmagorically restructuring the island of Manhattan, has a whole list of disparate influences, all vital, and ends by selecting one, Picasso's *Girl Before a Mirror,* as "the most important work of art of the last 75 years. . . ."

Richard Estes says the question is the kind he doesn't like to answer, and answers with Hopper, Joseph Stella, Demuth, Sheeler and Atget.

Chryssa found inspiration in the "anonymous world of the sign maker"; Pol Bury in Calder mobiles; Chuck Close in Pollock, Frank Stella and Andy Warhol; Mark di Suvero in Brancusi's *Bird in Space;* and Audrey Flack in opposites—Bouguereau and Pollock. There are many more, and almost all are of interest and marked by simplicity and generosity. But then, they weren't asked to cite reputations, earned or not, a challenge which can turn Jekyll to Hyde or Hyde to Jekyll in no time at all. Here things become a bit surreal. To give one instance,

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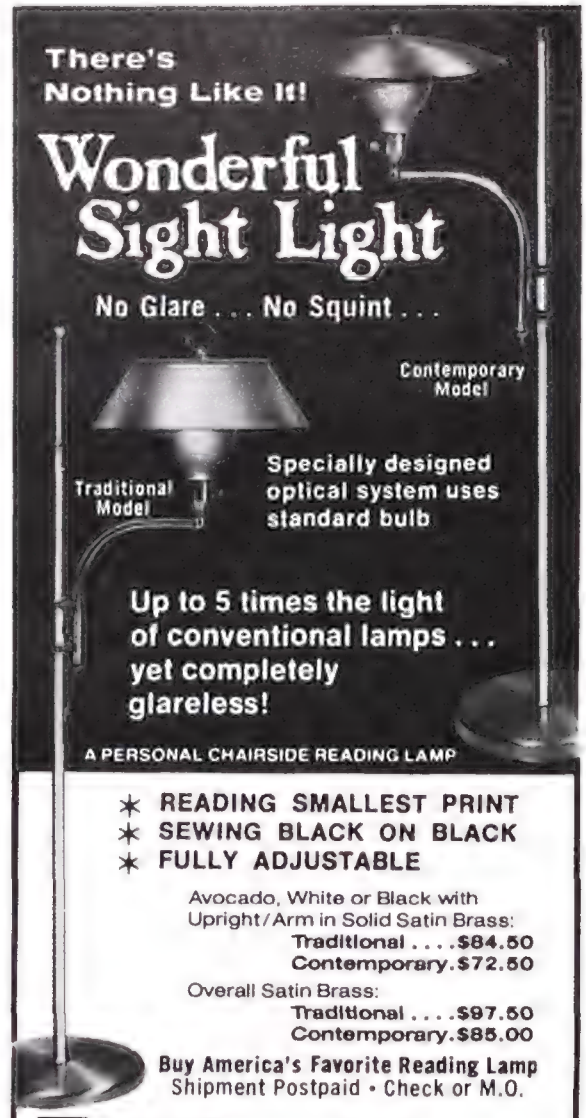

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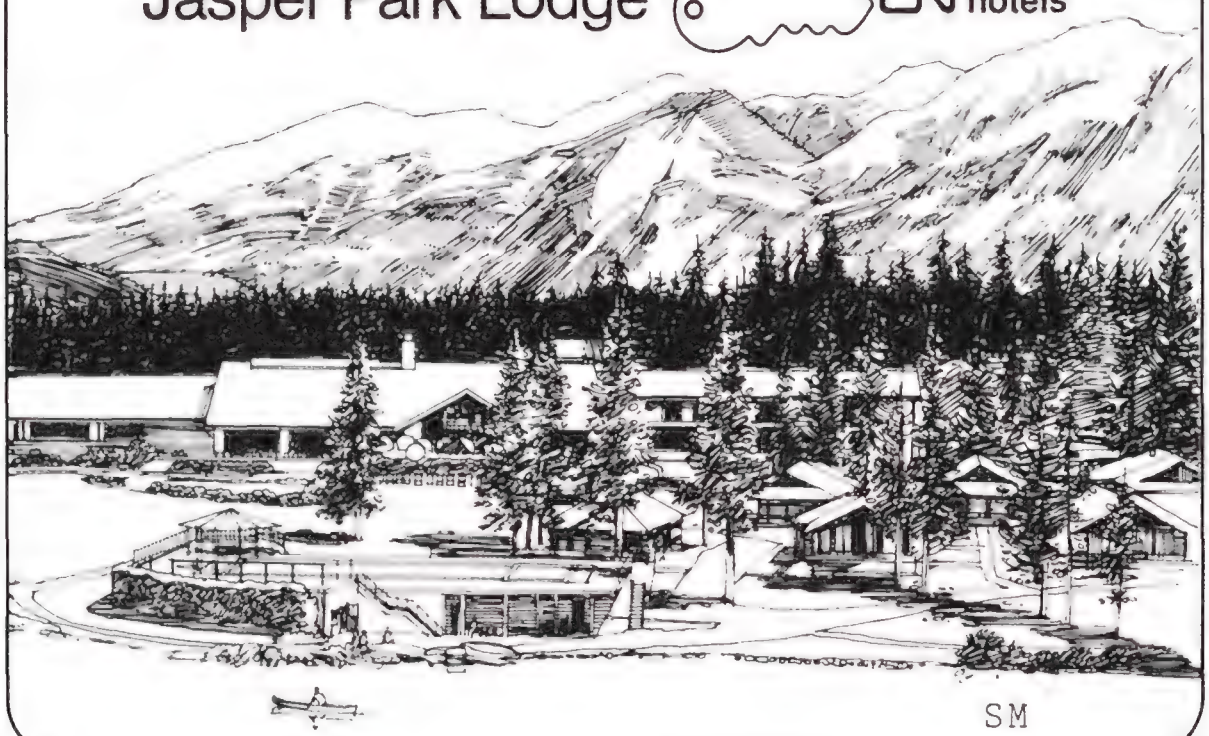

SM

Robert Rosenblum, professor of art history at New York University's Institute of Fine Arts, cited Andrew Wyeth for both categories—the most underrated and the most overrated. Here, in one blow, the professor disproves the ancient adage which says you can't have it both ways.

In all, this survey showed, according to John Gruen who capsulizes it for *ARTnews*, "that the artists deemed most overrated are Picasso [?—the question mark is because of how differently he rated with artists], Chagall, Duchamp and Wyeth." The list of neglected artists includes Munch, Carrière, Robert Gwathmey, Isamu Noguchi, Giorgio Morandi, Georges Vantongerloo, Hannah Höch, Lorser Feitelson, Milton Resnick, Sam Francis, Alfred Jensen, Horacio Torres, Asger Jorn, Jean Ipoustéguy. Comfort yourself if some of these are unfamiliar names; that is because they have been neglected. Do you know them? Congratulations on the subtlety and profundity of your knowledge.

Opinions: Michael Alpatov, professor of art history, University of Moscow: "Most underrated works of art: Matisse—the Vence chapel; Picasso—*Guernica*. Overrated artists are numerous."

Kenneth Clark in a serious and lucid little reply says Millet and Munch are underrated, that Kandinsky is overrated. But "these foolish prejudices usually right themselves after about 50 years, and are succeeded by others," Lord Clark says.

E. H. Gombrich, the distinguished English art historian: "Please forgive my having left your request without a reply. Frankly, I admire my colleagues who know the answer to this kind of question, but I don't."

H. W. Janson, professor of art history, New York University: "I've been thinking about your letter off and on for the last two months, and my conclusion, I am afraid, is that I can't comply with your request, since I don't really understand what you are driving at. Under- (or over-) rated by whom, and when?"

Sherman E. Lee, director, Cleveland Museum of Art—Most overrated: Marcel Duchamp, Op art, Futurism, Yves Klein, Andrew Wyeth, Modigliani, Chagall. Underrated: Walter Sickert, Lovis Corinth.

Robert Hughes, art critic, *Time:* Overrated: Andy Warhol. Underrated: Hannah Höch.

William S. Lieberman, director of drawings, Museum of Modern Art, New

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York—Underrated: Hannah Höch, R. B. Kitaj—at least in this country.

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Katharine Kuh, art critic—Underrated: Ivan Albright, Len Lye, Medardo Rosso, Earl Kerkam, John Graham. Overrated: Grandma Moses, Thomas Benton, Robert Motherwell (except for Spanish series), Andrew Wyeth, Max Weber and others.

(Did you ever think you might begin to feel sorry for Andrew Wyeth?)

Events of inconsequence

There is a book of photographs published recently by New York's Museum of Modern Art called *Public Relations,* the sharply revealing work of photographer Garry Winogrand. In it are public and nonpublic figures engaged in public events, among them events of the artworld. There are scenes from political life, party life, openings and the like. They all look the same, these people, no matter what they do or where they are—and that's the problem. The artists look like everyone else—dealers, museum directors, pedants, poseurs, critics, speculators. People in the artworld, it seems, are like people anywhere else. We expect more of them. We are deluded into thinking they are as important as what they do. We are wrong. Much better to settle for the work.

Who are the people who commissioned great works—the generals and politicians—and what difference does it make in terms of the work? All those names, those rhetorical personalities and makers of noise and misery, are forgotten. What is left is the art, and each great work exists by itself, independent of the artworld, its personalities, its pressures. Max Beerbohm, as usual, understood the situation better than anyone and put it better than anyone. He lamented, he said, his inability to keep pace with the great names of his time as they faded into oblivion. Now *there's* a one-man survey for you.

If all this confuses or bemuses you, as it does me, you can go to a museum and, well, look at the art. You might then recall, if you are lucky, that stunned moment during which El Greco's *View of Toledo* first burst upon you; the first time you saw Rembrandt's golden self-portrait at the Frick. That is what it is about, after all, to permit you to feel that way, to discover that you *can* feel that way, and it is quite beyond and above the artworld.

—Bennett Schiff

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'Construction project of the century': a new railroad to tap Siberian riches

Opening the frozen land will take a decade of hard labor—and the Soviets intend to settle a million people along the line

Article and photographs by Howard Sochurek

Track-laying gang pushes rails and ties into place on a spur track to coalfields near Zolotinka.

Wiggly tracks at Magistral'nyy, where roadbed is laid on permafrost, will have to be straightened out before trains can run at more than a snail's pace. Thawing beneath tracks can shift them out of line.

It is built in places on an ice block 1,000 feet thick; it crosses 142 large rivers, spans seven mountain ranges, will take 500,000 workers ten years to complete. Almost 2,000 miles long, it will cost $15 billion. Leonid Brezhnev calls it the "construction project of the century." It is the Baikal-Amur Mainline Railroad, BAM.

The BAM route (map, p. 38) crosses Siberia, once a land of exiles, religious refugees, runaway serfs and fugitive rebels. In the Buriat language, it means "sleeping land." Maxim Gorky called it a "land of death and chains." Today it is called the "land of the long ruble" because of the bonuses given to BAM workers. Siberia has one of the world's most hostile

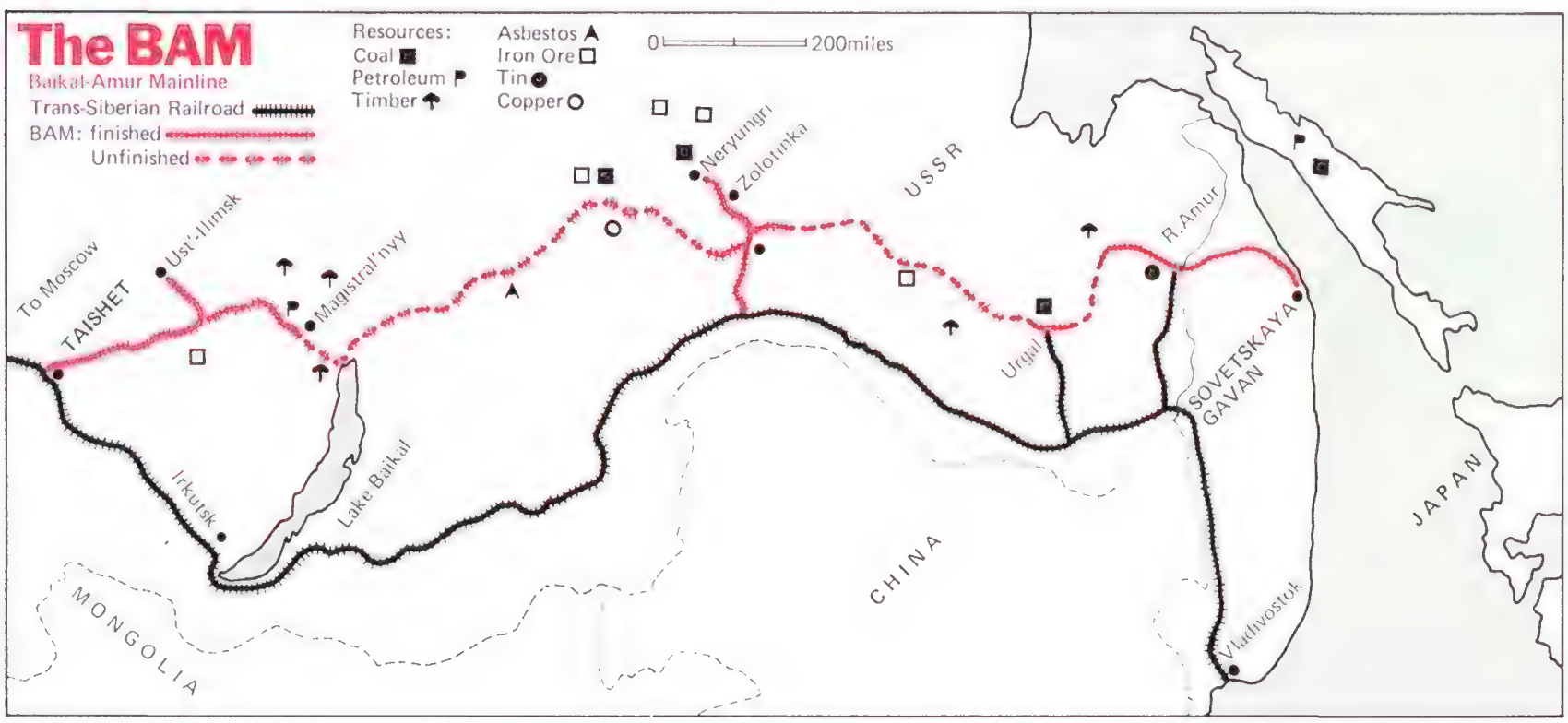
Faces of the *Bamovtsy* toilers. From left, Ivan Bugai, camp director at Zolotinka; a Yakut reindeer herdsman from Zyryanka, up in the Arctic Circle; a bridge-construction man at the Iengra River;

climates. Along the BAM, summer temperatures soar above 90 F. In winter, −60 F is not uncommon.

Two-thirds of the railroad will be built on permafrost, permanently frozen earth and ice, that is subject only to a thin surface thaw in summertime.

But the land is immensely rich in natural resources. There is an old tale in Yakutia, North Siberia, told to me by an aged ivory carver, Terentii Vasilyevich Amosov, who uses the tusks of the great shaggy mammoths that lived in the Pleistocene epoch and to this day are found preserved in the everlasting ground ice (SMITHSONIAN, December 1977). He carves intricate reindeer statues barely four inches high. The story goes, "When God created Earth, He carried a huge sackful of all the world's resources. He passed over Siberia carrying His sack and as He passed His hands were frozen and He dropped the sack. And here sits all of God's resources."

Today, 15 percent of the homes in West Germany use natural gas from Siberian fields and someday homes in Washington, New York and Philadelphia may well be using Siberian gas, too. There are the



a railroad guard on the spur line running to Neryungri; a jack-of-all-trades who works on BAM

near Ust'-Ilimsk; and a tousle-haired surveyor near Magistral'nyy. Work is hard, but pay is good.

huge (500 million tons) coal reserves at Neryungri; gold, mica and estimates of more than ten billion tons of iron ore in the Aldan district; diamonds at Mirnyy; open-pit copper at Udokan (1.2 billion tons); oil near Ust'-Kut; asbestos at Molodezhnyy; phosphate for fertilizer at Seligdar (three billion tons); and everywhere, the vast forests of the taiga.

For centuries these riches lay dormant, like the huge Siberian brown bear, sleeping through endless winters. In recent years, largely through the work of geologists attached to the Siberian science city at Akademgorodok in Novosibirsk, surveys of the taiga have discovered some of the incredible wealth, but millions of square miles are still to be explored.

The problem has always been transportation. Siberia for the most part is without roads. Only one east-west artery exists, the old (1897) Trans-Siberian Railroad which skirts the southernmost border of the USSR and in places almost touches the border with China, now hostile and unfriendly to the Soviets. If you stand on the high bluff overlooking the Trans-Siberian line at the southern tip of Lake Baikal, where the Angara River drains this mile-deep, 400-mile-long body of fresh water—the deepest lake in the world—you will see an endless line of bumper-to-bumper trains on the right-of-way. Passengers often report long delays on sidings as priority military and supply trains are red-balled on through tracks.

The BAM passes through six political and administrative subdivisions. Each has a planning board responsible for the economic plan of the region. In Irkutsk, in the impressive, block-long, gray stone "House of Soviets," as the government building is called, I talked with Leonid Zmanovskikh, chairman of the Irkutsk Oblast Board.

"Just as in your country, in 1869, when the Union Pacific Railroad and the Central Pacific joined the Atlantic and Pacific and caused a rapid development of your economy, now it is necessary for us to develop the northern part of our region," he said. "The first stage was the hydropower station at Ust'-Ilimsk. Without a railroad it would not have been built."

Started 15 years ago, this huge generator station already is supplying power to a work force of 16,000 people who have begun construction of a vast cellulose complex about ten miles from the dam. Once a sleepy hunting and fishing village on the banks of the Angara River called Nevon, with fewer than 40 old, wooden log houses, today it boasts a growing population of 57,000. The power complex produces 20 billion kilowatt hours of electricity annually. A second-stage development cellulose plant will produce 500,000 tons of cellulose, plus resin, turpentine, plywood and fodder.

Comrade Zmanovskikh told me the third stage of planning was the development of three additional centers of lumber and cellulose production, primarily to feed the hungry resource needs of the Japanese. Some 130,000 square kilometers of forest lands will be exploited containing two billion cubic meters of lumber. He figures that 13 million cubic meters can be cut annually without upsetting the balance of nature.

The hotel in Irkutsk, on the Angara River, had been filled with Japanese during my stay there; I asked about them and was told: "Near Neryungri we have both iron and coal. The Japanese have discussed

Ice shatters as a workman's tool strikes it; this frozen terrain underlies two-thirds of line.

Workers clamber up the steel framework of the gigantic new cellulose factory at Ust'-Ilimsk.

development with us. We have a billion-dollar trade agreement with them now. They are providing construction cranes and earth-moving equipment in return for future shipments of natural resources, mostly coal, starting in 1983."

One Japanese businessman, frustrated while waiting to conclude a deal, said he would trade in anything. "How about ten live Siberian brown bears?" his Soviet business partner asked. The Japanese promptly bought them.

At 6 A.M. on a cool Siberian summer morning, my guide Yurii Subotin and I boarded the Antonov-24 (a turboprop jet) that would take us northeast to the BAM construction at Zolotinka. We flew low over the endless green bogs that line both sides of the mighty island-dotted Lena River. Here and there, but miles apart, were small log cabin villages clinging to the riverbanks. An hour south of Yakutsk the forest line began. Before that there were no trees, just grass.

At Chul'man, Yurii and I were met by a charming hostess in a huge curtained bus that normally carries 60 passengers. She was Valentina Kostina, one of the few English-speaking inhabitants in the area. Normally in charge of school administration, she had been assigned by the First Secretary of the Communist Party Organization to help us, and he had sent his private bus. Valentina explained the great shortage of transport was due to the feverish summer construction schedule on the railroad. The rush was to meet a deadline. On November 7, the USSR would celebrate the 60th anniversary of the Bolshevik Revolution. The Party Secretary's bus was all that was available and it stayed with us for the entire four days of our visit. We were an unlikely sight, three people bounding across the vast, mud-rutted taiga in a huge bus with white lace-curtained windows.

Valentina took us to a guesthouse that had opened that very day in Neryungri to house foreign specialists and advisers. Two Americans from the Unit Rig Company in Tulsa, Oklahoma, were expected with a shipment of heavy trucks for the nearby coal mines.

Valentina told us that other foreign equipment had been purchased for railroad construction. During the last two years a West German firm has supplied 9,800 trucks in two models, one a 19-ton and the other a 26-ton dump truck. The cash deal was for more than a

Howard Sochurek, former Life *photographer, wrote for* SMITHSONIAN *(January 1974) an article about Siberia after an earlier reporting trip there.*

The mile-long tunnel at Nargornyy, being dug from east, west, and above, is well under way here.

billion Deutsche marks, about a half billion dollars. The United States firms of Ingersoll-Rand, International Harvester and Caterpillar were also suppliers to the Neryungri mines.

Siberia lacks people and for years there had been a net decrease in its population, attributed by most experts to the hostile climate and shortages of food and housing. So when Party Secretary Brezhnev, who himself had administered the vast virgin-land development program in Kazakhstan in 1958, announced the BAM project in March of 1974, the task of recruitment was given to the Komsomol. This young people's Communist organization had been a source of construction workers since the end of World War II. First, a massive propaganda campaign was staged through the national press. It appealed to the sense of adventure and patriotism of Soviet youth. Special incentives were announced: a pay scale averaging 170 percent above that in Moscow, a six-month vacation after three years of work plus a free round-trip air ticket to anywhere within the USSR. Special privileges too were given to BAM workers for the immediate purchase of a new automobile (normally there is a three-to-five-year wait for a new car).

The response to the appeal was immediate and

On newly laid trackage, summer student volunteers from Khabarovsk shovel gravel between the ties.

Working on the BAM line

Looking green and mild in summer sun, Ust'-Ilimsk is a railroad boomtown filled with BAM workers

successful; 156,000 applications were received in the first six months, more applicants than jobs, and the flow of applicants has continued to this day.

At breakfast one morning with Valentina, I talked to Professor Kim Yen Oon, a political scientist at the Irkutsk Polytechnical Institute, about the motivation of young people in this age of the hard-rock music and jeans culture that has swept the USSR much as it has the West. Kim was roving from camp to camp as a lecturer. He explained, "Young people want to decide for themselves what they want to do. They want to find their place in life, to find themselves. On the BAM they can exchange ideas with other young people of many nationalities from all over the Soviet Union—the Evenk or Buryat reindeer herdsman from Yakutsk or the grape grower from Armenia. Besides, they have a big salary, as much as $1,000 per month for a tractor driver. Wouldn't your youth respond?"

After a day of rest and arrangements we left our comfortable guesthouse in Neryungri to visit a BAM construction area. Again we mounted our curtained bus and headed south to the camp at Zolotinka.

The railroad is being built in pieces, not as one continuous line. Each section of approximately 100 kilometers is assigned to a mobile construction organization or a Komsomol building unit. A unit is mobile in the sense that it works in one area for the time it takes to complete that section of track, then leapfrogs on to another section hundreds of miles away.

The camp at Zolotinka is headed by Ivan Dmitriyevich Bugai, age 52. Bugai was wounded on the German front during World War II and was evacuated to a hospital in Irkutsk. He has remained in Siberia ever since. As he remarked to me, "My health returned and I will give my life to Siberia, as it has saved mine, to build a better place for my children."

Camp 591 is a nondescript huddle of makeshift prefab and wooden shacks clustered on a hillside. It overlooks a valley formed by the river Iengra. Zolotinka in Russian translates as "rich with gold" and Iengra is "rich river" in Yakut. Along its bank, the main line is being constructed. When he first arrived two years ago, Bugai lived in a portable work cabin, a blue-green metal box about ten feet long crammed with four bunks and a wood-burning stove. Scores of these cabins remain as well as newer log cabins that have been built for greater comfort. There is no plumbing. Water is carried from a well and sanitation is provided by the ever-reliable *ubornaia* or outhouse.

Bugai presides over a settlement of 6,000 people of 27 nationalities from all parts of the USSR. The average age of his workers is 27. He has 742 students in the ten-year school he set up, and 260 children in kindergarten. Sixty-two babies were born in the first six months of 1977. Bugai has instituted a dry law in Zolotinka: no hard liquor is sold. Only wine may be purchased and then only on Friday and Saturday. Vodka is available only for marriage feasts.

We spent two days with Bugai and he took us up and down the line. We visited the tunnel construction

and families living in prefab houses and log cabins. Some have skiffs for fishing in the Angara River.

at Nargornyy, where workers were blasting through solid granite for more than a mile. About 3,000 feet was completed, 30 feet high and 21 feet wide.

The men who lay track are mainly Yakut tribesmen, many descended from reindeer herdsmen. Seventeen men work in a track-laying brigade. A special track-laying train of 40 cars called a *putevkladchik* has seven sections of 80-foot lengths of prefabricated track on each car. It moves over the newly laid track and new sections are manhandled into place by the 17-man gang. A good team can lay a mile of track a day. They are paid in cash twice a month and make about $1,000 monthly. Extra bonuses are paid if the work is completed ahead of schedule. This could bring their annual income to about $18,000. Surprisingly, Director Bugai makes only 550 rubles per month or about $730.

I was anxious to see a Komsomol camp, so we left Valentina and her bus at Chul'man, retraced our route back to Yakutsk, then went on by air to Kazachinskoye and the work camp at nearby Magistral'nyy.

Our host was youthful (age 35) Vladimir Spiridonich Selifanov, deputy secretary of the party organization. After a dinner of raw fish, a deliciously sweet-tasting boneless variety called Taimen, freshly caught from the crystal-clear Kirenga River, I mentioned my interest in Siberian bear. Were not the workers often attacked by bear while building the railroad, I asked? I had heard of such a case on a previous trip. "No casualties as yet," Vladimir answered, "but I will take you to our best bear hunter."

We drove to the cozy log cabin of Mikhial Stefanovich Borovskoi, age 51. He is in charge of all the embankment construction over a distance of 95 kilometers. A lean and wiry man of average height, his real love is hunting and fishing. And above all he loves to hunt bear. I reported that recently an American from Pennsylvania had been in the area and had spent $5,000 on a hunting safari. Borovskoi laughed and added "I hunt here for free."

The hazard of ground ice

Borovskoi has been in Magistral'nyy for three years but has been building railroads since 1953. He is married, has two children and keeps a permanent apartment in Novosibirsk, 2,000 miles to the west. He described how when he first arrived he lived in a tent and worked with the *lesorby* (woodcutters) clearing the right-of-way. Then came the *bulldozeristy* and the *mostostroiteli* (bridge builders) and finally the track-laying train and the *montyory puti* or finishers. A special word, *Bamovtsy,* sprinkled his conversation. It is applied to all workers on the BAM.

He told me of the enthusiasm of the young Komsomol workers, some barely 18 years old, who form work groups of 60 men and women assigned to specific tasks: building a culvert, tapping the gravel fill, or pouring concrete into bridge supports.

One of the big problems in this area is ground ice. Simply stated, what happens in this complex physical process is that as the thin upper surface of the earth (3-to-13-feet) freezes in the fall, it presses downward on the permanently frozen earth below. This forces to the surface water which flows in layers across the landscape. This ground ice may spread and affect an area of a hundred or a million square yards and is up to 15 feet thick. The thicker the ice mass, the faster the underground water flows to the surface. It has been known to flow at 300 gallons per second.

Ground ice areas appear without notice and are dangerous to work crews. Several huge cranes and bulldozers suddenly have disappeared into ice and water, and one construction worker has devised an explosive seat, much like the ejection seat of a military airplane, to toss drivers from sinking vehicles.

Other problems plague Borovskoi. The winter of 1976-77 was severe. For 45 days it was below −58 F and all work stops at −42 F. Schools close at −31 F be-

cause of the health hazard to children. At a temperature of −58 F sparrows fall frozen from the sky, huge bulldozer blades crack in half like glass breaking.

Then, too, there is seismic activity over 40 percent of the territory of the BAM. Earthquakes trigger avalanches and earthslides. Between the North Muya and Udokan mountain ranges east of Lake Baikal an average of 350 avalanches occur each year. A quake of 7.9 on the Richter scale was recorded in 1957.

Magistral'nyy is not unlike Zolotinka. It, too, is a mobile settlement of about 6,000 people. Though homes and apartments are not luxurious, they are clean and comfortable. There are wooden single-family houses, log six-family houses and wooden 12-family, two-story apartments.

A great effort is made to provide creature comforts. Every Thursday an Aeroflot helicopter arrives at Magistral'nyy with fresh fruits and other perishables. In the general store I found frozen ducks and chickens from Belgium, chinaware from Japan and men's shirts from Tokyo. A kilogram of Moroccan oranges (2.2 lbs.) sold for 1.40 rubles (about $1.80). A dairy store was well supplied with milk and eggs, also brought by helicopter. A small theater shows films every night for 20 kopecks (about 25 cents). Almost every log house has a television set. Programs are beamed from Moscow by satellite but program times are odd since Moscow time differs from Magistral'nyy time by six hours

Two experiences on my trip to Magistral'nyy further emphasize the problems of BAM construction. As we slowly toured the access road along the roadbed, I stopped to visit with a beautiful young surveyor at work atop an embankment. She was Natasha Filonova, 21, a Komsomoler from Khabarovsk. She took us to see an unusual sight. Just off the embankment, partly hidden by a moss covering only an inch or so thick, was a huge ice cave. It was slowly thawing and the water flowed to a spill that drained into a pipe under the track. Natasha explained that in this area the railroad was actually built on a bed of ice and every effort was being made not to disturb the ice. But it is anybody's guess whether ten feet of gravel piled above this ice will affect it and just how.

Twenty miles to the east of the ice cave, I met Andrei Stoyanovsky from Volgograd. He was in charge of bridge construction and was finishing work on a bridge (347 meters in length) across the fast-flowing, ice-cold Kirenga River, a tributary of the Angara. A thin, tall,

A self-propelled inspection car carries officials near the Magistral'nyy construction town. Only one-way traffic can move on this stretch of the road, but in time entire line will be double-tracked.

handsome man of 31, he had been working on this bridge for two years. He crawled with me to one of the supports where a huge underground well had suddenly opened up. Tons of concrete were being poured to seal this well and his hope was to complete the work before winter. Andrei told me of a unique feature that he had planned. To prevent disruption of the permafrost, freezing coils like those used on a home refrigerator, but much larger, would be introduced into the centers of the steel uprights. These were sunk 30 feet into the riverbed and were the main load-bearing supports. A constant freezing temperature would be maintained year-round inside and out, lest the uprights loosened in the thawing permafrost.

Fascinated by my interview in Irkutsk with Chairman Zmanovskikh, I was anxious to see what happens to a place after the railroad finally does arrive. As the chairman had told me, one of the first rail centers to be completed was Ust'-Ilimsk. Together with Yurii Subotin, I flew there. Though its airport is still a single gravel 2,000-foot strip that handles mostly twin-engine Antonov-2 prop planes and an occasional DC-3, nearby lies a power dam that stretches for more than a mile to hold the Angara River.

Six-story apartments house technicians from Sweden, Hungary, Bulgaria and the GDR (East Germany). On the outskirts of town rises a huge power

A new diesel railroad engine pulls prefabricated track sections to work site near Magistral'nyy.

Flanked by button panels and screens, a technician monitors a battery of dials and switches in the control room of the new hydroelectric complex at Ust'-Ilimsk, where the Angara River is dammed.

and cellulose complex that now employs 16,000 people. In the city center a hard-rock band pounds out American hits on the second floor of the Angara Restaurant, and unattached girls with their red-bleached coiffures eye the handsome *Bamovtsy*.

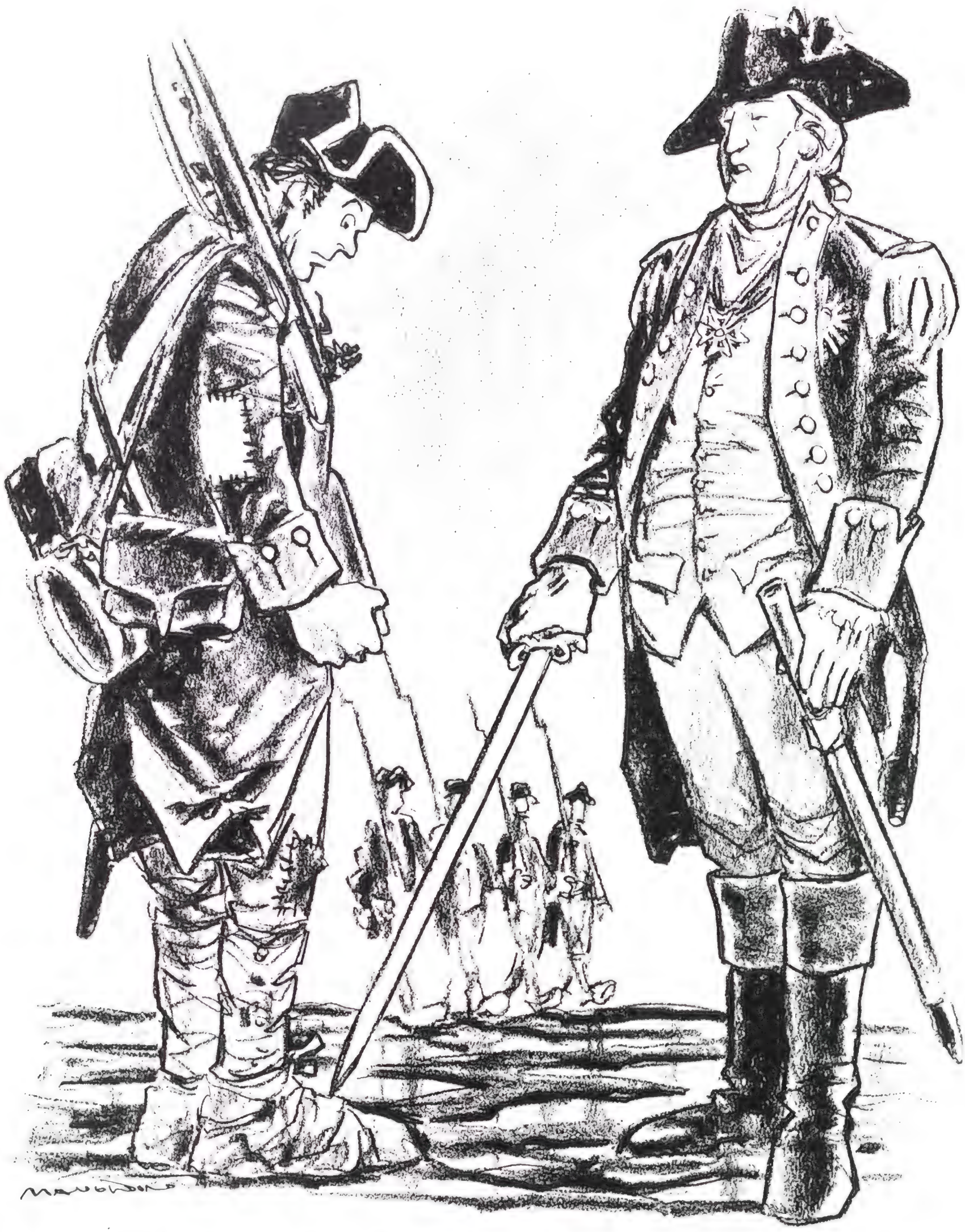
My trip had taken me to the western and central divisions of the BAM; the eastern part is being rammed through by soldiers of the Soviet Army. In all three, the obstacles seem insurmountable, yet the BAM is getting built. When it is finished, perhaps a decade from now, running 100 to 500 miles north of the old Trans-Siberian line, it will shorten the trip across Siberia by two days, to four-and-a-half days.

The BAM project is much more than just building a railroad and tapping mineral wealth. It is a huge resettlement program in which more than a million people will settle in 60 new towns along the right-of-way. Beyond the economic changes, the social changes implied by BAM, for Soviet and other societies, cannot even be estimated. All this and more, when it is done, the railroad will have wrought.

Packing gravel between ties, young women use wooden shovels when steel tools run short.

At the Zolotinka construction camp, a working couple wait for transportation into town for the evening.

Growing up in Siberia: workers' children at play in yard of apartment near Ust'-Ilimsk cellulose plant.



"...Und ven I yell, 'ACHTUNG!', I vant to hear dose rags click."

Prussian spirit was instilled in the U.S. military, says Mauldin, by Friedrich von Steuben, a "bogus baron" and major martinet who issued detailed instructions even for getting a drink of water.

The outrageous Bill Mauldin and his *revolution*

The creator of Willie and Joe finds that Army brass behaved like brass—and footsloggers like GIs—two centuries ago

The spirit lives on: "Straighten those shoulders! How long you been in the Army?" a new and neat officer demands of a weary World War II soldier.

Three years ago the National Park Service, with the Bicentennial in mind, asked Bill Mauldin to do "an informal study in cartoons and text of our Revolutionary soldiers" of two centuries ago. Mauldin did, and on these pages are excerpts from the forthcoming book that resulted, called Mud and Guts. *The Park Service got what it should have expected from the wry and ribald humorist who, in hundreds of cartoons drawn on European battlegrounds in World War II, had allied himself firmly on the side of the common soldier, never on the side of the officer corps. Neither George Washington nor Baron von Steuben (opposite) comes off as "the sort of commanders I would care to follow to hell and back." Not in Bill Mauldin's book.*

Today's Mauldin signature is a self-caricature.

When the war began at Lexington and Concord in 1775, there was no such thing as an organized American army. Well, one was formed, sort of, in that year, but a third of the way through the war, by the time of the encampment at Morristown, New Jersey, in 1777, it was still pretty much a ragtag, amateurish bunch. In fact, even a year *after* that, the men staggering into winter quarters at Valley Forge were a long way from being crack troops by military standards of the day.

There was no question about courage. Twice at Bunker Hill our "rabble" showed superb self-discipline and held their fire until they actually saw the whites of the enemy eyes, then retreated only because they ran out of ammunition. But they couldn't salute or march in step worth a hoot. In fact, our military presence was so pathetic that some historians feel the American Revolution might have been more realistically called a rebellion. Perhaps secession is an even better word. After all, a successful revolution changes the mother government. We didn't change Mama a bit—we merely left her.

The average American in those days was about what he is today: a small property owner who admired independence and occasionally was even known to practice it. Then, as today, he resented being governed and taxed by a bunch of remote, powerful bureaucrats. He grumbled a lot over little tyrannies such as stamp acts and tea taxes—but a *revolution*? The very word causes a shudder to run up the bourgeois spine.

Most people would rather be moderately comfortable and safe than stand up and fight for an illusive term like "independence." It has been said that if there had been a back door in the Alamo, there would be no Texas. Likewise, if the royal administrators who

Adapted from *Mud and Guts* by Bill Mauldin, to be published by the National Park Service. © Mauldin 1978.

ran the Colonies had had an ounce of sense and perception, our hard-nosed radicals, such as Tom Paine, would never have prevailed and there would have been no rebellion, no Revolution. The British were really nuts to have let all this happen. But that's the way things go when bureaucrats feel safe. They become blind and arrogant.

Chances are that our hypothetical citizen would have gone along with the gang and joined the Revolution. Not, however, as one of those raggedy, raffish fellows one normally associates with this sort of activity. George Washington himself had little use for the unruly or uncouth, even as he accepted the responsibility of leading them. In one of his 1775 letters home, shortly after he took command of the American forces, he referred to the Massachusetts Continentals as "an exceedingly dirty and nasty people."

General Washington had a lot of physical problems. He suffered from rheumatism, he had nasty attacks of dysentery. One of the things which probably curdled his innards the most, and might have contributed to his recurring toothaches, was the endless problem of how to keep recruits after they came into the army. Obviously, they all supported the cause, but they were unable to see why they couldn't go home to look after their families and property when they weren't actually fighting. After all, to some inexperienced soldiers, one battle seemed like a whole war. When that particular engagement was over, many of those who were refused permission to go home simply went over the hill.

Before eventually deciding upon a standard three-year enlistment period for everybody, our Revolutionary leaders tried many forms of cajolery to stop the ranks from melting away. They even adopted the tactic of paying the men a reasonable wage. That was a radical departure from tradition in those times, and it deserved to work. Unfortunately, the "Continental," the printed dollar of the new Congress, depreciated faster than it could be printed.

While Washington's army starved and froze at Valley Forge, nearby farmers and merchants sold mostly to the British—not because of any particular political leanings but simply because they were businessmen and the pound sterling was solid currency. All the necessities of clothing, blankets, shoes, tools, horse fodder and even gunpowder became hard for the Revolutionary forces to purchase, simply because their money was considered worthless. The moral is probably that if you plan to start a revolution in our society, you should begin with a handful of credit cards and a sound credit rating.

As I've done research for this book, and traveled some of the paths worn by our ancestors 200 years ago, I've wondered a lot about what made Washington's men tick. As we know now, they had much to lose and little to gain by taking the side they did.

I think the answer is probably simple cussedness. We inherited a streak of eccentricity from the British, who positively revere the trait. In every war the American soldier has fought, he has distinguished himself only in adversity. Even when he is well-trained, adequately paid, and superbly fed, the first time he meets the enemy he finds it shockingly unreal that anybody would try to actually hurt *him*.

Mauldin has his share of simple cussedness. In a section called "Rabble with Rifles" he vents some of it on the generals at whose hands the Revolutionary soldier fought, bled and died—or lived with mud and a private army of lice.

War in 18th-century Europe was fought by peasant-conscripts, officered by the educated upper crust. Civilian life there was rigidly structured: you were born into a class and you bloody well stayed there. And it was simple, convenient and sometimes even efficient to carry this caste structure into battle. Common soldiers were expected to be lunkheads, and any man or child so regarded by so-called superiors usually manages to fulfill the image.

Officers, on the other hand, were supposed to be born gentlemen and natural leaders. It just sort of came with your mother's milk, even if she hired a wet nurse so she could keep her figure fashionable.

The term "cannon fodder" meant just that. A soldier was expected to commit suicide in cadence, without a flinch, whether advancing into grapeshot or hurling himself upon bayonets. To bring him to a state of mindlessness where he was ready to do this, he was drilled physically and bullied mentally and spiritually until he was not only convinced he was the lowliest scum on earth (remember, he had been taught this since childhood), but that his only hope of salvation, his ticket through the Pearly Gates, was to climax a lifetime of servility by an act of self-sacrifice.

What justified all this, as much as anything in war is justified, was the primitive nature of the weapons used up to and throughout the 18th century. Fists, clubs, spears, slingshots, arrows, muskets that couldn't hit a bull in the rump at 50 paces, cast-iron cannon that were as dangerous at the breech as the muzzle, and bayonets—all this stuff put you eyeball to eyeball with your opponent. It's ironic that the American army was created right at the end of what might be called the long era of the pointed stick, just when military technology was about to become sophisticated. The forerunner of the new weaponry that would enable an individual soldier to use his smarts and strike from afar was, of course, the long rifle.

A reverence for riflemen

We Americans have always revered our legendary frontier riflemen. A lot of our well-known national preoccupation with firearms goes straight back to those "Pennsylvania" and "Kentucky" rifles. These in turn go back to early 18th-century German and Swiss craftsmen who developed the rifle as a hunting weapon and brought it here, along with their other talents, as immigrants.

A good man with a good rifle could hit an enemy in the head at 200 or 300 yards—no mean feat even today. On the other hand, a non-rifled, smoothbore musket, the world's standard military arm at the time of the American Revolution, couldn't be depended upon to hit a human-sized target at more than 80 to 100 yards even in the hands of an expert.

As schoolchildren, most of us swallowed the notion that the Redcoats were an army of stuffy Britishers and plodding German mercenaries marching in rigid ranks and being decimated by our deadly-eyed, moccasined, tobacco-chomping lads sniping from behind the shrubbery with their lovely rifles.

The truth is that the American marksman wasn't all that invincible all the time. At Wetzell's Mill, North Carolina, in 1781, 25 veteran riflemen who had fought at the battle of King's Mountain all took a crack at close range at a mounted British lieutenant colonel named James Webster and couldn't even hit his horse, although most of them were so sharp they were able to reload and miss again. Maybe they had been nipping at the jug.

Personally, I think a lot of the reason our army did not exactly encourage individualism among its fighting men lay with George Washington, who set precedents followed by our military to this day. The result

"Rabble rousers!"

is that through all the ranks we have always had two types of soldier: those people who look good on the parade ground, and those who look good in a fight.

Higher up the rank scale, I have known two kinds of American general. I'm aware that some of the most pompous martinets have won some of the biggest battles. I am simply allergic to martinets, that's all.

Among the most famous generals in our history, we find spit-and-polish types such as Douglas MacArthur, who loved pomp and parades, and George S. Patton jr., who in speech and manner exhibited some of the characteristics of a spoiled brat. We also find many down-to-earth, unassuming Omar N. Bradleys, and quiet, thoughtful, statesmanlike George C. Marshalls. Some have been mixtures: Ulysses S. Grant, who hurled divisions about the battlefield like Patton (but not whooping with joy like Patton), and who, like Bradley, was nice to his orderlies and kept forgetting where he put his hat.

Possibly the best combination of all good qualities was found in Robert E. Lee, who managed all at once to be impressive, lordly, fatherly, inspiring, gentle, tough and brilliant. In other words, he knew when to be what. An orderly polished his boots and sword not in meniality, but because he knew Lee had more important things to do with his time. Somehow Lee conveyed to his men that he was thinking about them, not merely moving them about the board.

As for Washington, I find myself comparing him in many ways to MacArthur. Both loved their creature comforts. Washington had a special, folding "four-poster" camp bed hauled around for him. (Again, poor old George suffered many ailments, so perhaps I judge him too harshly for this.) Both were austere and anti-egalitarian. Both managed to win their wars. It's their style that interests me.

Why did Washington opt for drafting riflemen into the regular ranks and issuing them smoothbores and bayonets? I think the very idea of some laconic, rude, unwashed good ol' boy with a red neck and a long rifle he loved more than his woman (he slept with it more, too, to keep the lock of the gun dry) cluttering the ranks was enough to shock any proper officer right down to his soft, shiny leather pumps.

Probably the man most to blame for instilling the Prussian spirit which permeates our military to this day was a bogus baron from Magdeburg named Friedrich Wilhelm Ludolf Gerhard Augustin von Steuben, in 1777 an unemployed soldier of fortune. He called himself a general, his rank was captain, and his forte was drilling soldiers.

Professional mercenary fighting men were the chief Teutonic export in those days, as the British well knew, having hired tens of thousands of Hessians to keep the American Colonists in line. Friedrich, the drillmaster, lucked out when he found a couple of prominent rebel sponsors, Silas Deane and Benjamin Franklin, who presented him to George Washington as a baron and a lieutenant general from the Prussian king's own personal staff.

Popular legend gives us a picture of von Steuben arriving in 1778 at Valley Forge, where he was appalled by the sight of a ragged, disorganized, freezing,

"Wait your turn, soldier!"

"I forgot...are we advancing or retreating?"

starving gang of Revolutionaries. This is always good theater: the newcomer is a martinet, snarling and snapping and sneaking up on the slobs for their own good until, lo! The mob is transformed into a crisp military machine.

Friedrich even wrote a book of regulations which became the Bible of Washington's army. Once you accept the notion that his was the only way to fight, many of the regulations make sense. There are pages of detailed instructions on how to maneuver a battalion through an obstruction without messing up the unit's geometry. Von Steuben did not believe in leaving much to the imagination. If any of our wild-eyed Revolutionaries wanted water, "They must apply to the officer of the police, who will order the drum to beat the necessary signal; on which all who want water must immediately parade with their canteens before the colours, where the officer of the police will form and send them off under the care of two noncommissioned officers of the police, who are to be answerable that they bring back the whole detachment, and that no excesses are committed whilst they are out. Wood and all other necessaries must be fetched in the same manner. . . ." That's what he said.

After a little of this, the prudent soldier, feeling a pang of thirst, would probably sigh, scoop up a mouthful of snow, and go back to molding musket balls, which could have been the crafty Prussian's strategy all the time.

Military technology has advanced mightily over the years. Mud, meanwhile, remains the same, in appearance and composition as well as effect. While ordnance computers plot ballistic curves, rain falls in straight or slanting lines, depending upon the wind, and turns dirt into something which, when churned and blended by hundreds of wheels and thousands of feet, becomes what I call Military Mud.

Study the meteorological data of any campaign in history, including the American Revolution, and you will find record rains, followed by bottomless mud. In summer, as the infantryman sucks one boot out, hoping his foot stays in it, replants it, and starts sucking the other one out, he finds himself wishing for winter, so the stuff will harden. Winter does indeed come, bringing the added discomforts of chill, but does the mud freeze into a reasonably stable mass? Not while you and your friends keep treading and stirring in it. How can it? Winter mud only hardens as you sleep in it. The bivouacking Valley Forge veteran, snoring in a snowbank, sinking slowly through the fragile, melting flakes, knew full well he would awaken gripped in

"Schnapps! We've captured our first Hessian."

"Well, nobody can accuse us of being mercenaries."

the clammy, frigid embrace of Mother Goo herself.

If our Revolutionary stalwart was lucky enough to be issued a coat, he usually discovered that it couldn't fully cover both firearm and person, and so he had constantly to make choices between the welfare of one or the other. Headed for battle? Probably better to arrive with a scratchy throat, a dripping nose and a dry piece. But how well could he fight with flu? How well could he aim with chills and fever? Of course, it did not matter much with the average flintlock!

No text on soldierly discomforts would be complete without mention of the cootie, or body louse. This little devil was the bane of military life right up to World War II, when DDT came along. Now that there is a serious question whether the insect or the chemical is the greater menace, it's possible that the cootie might stage a comeback.

It is certain that during our revolt against George III, the cootie became king. Soldiers who looked after their clothing and bathed regularly controlled the pests to a degree, but personal hygiene was difficult under the best of circumstances. Soap was a rare luxury, and even the cleanest private had on him two or three especially tough lice, resistant to the most vigorous scratching or dousing by poisonous substances—even Colonial whiskey.

If a foot soldier noticed while attacking a particularly obnoxious gang of lice on his anatomy that one was constantly quicker than the others in scuttling to safety, he would enter the sprinter in races against other men's cooties. The winner would be plucked to safety and put gently to bed in some comfortable container, such as a snuffbox, to rest up for another run. If the loser was a close second, he, too, would be saved; otherwise he would be burned with the paper or cloth track and the owner would start searching his person for another thoroughbred. This rather brutal sport often drew large crowds and inspired huge bets, to be rivaled only in later years by shipboard crap games.

And what if the Revolutionary got sick or wounded? Either way, Mauldin found, it was a fate worse than death—not that he thinks military medicine is so much better now than then.

American military medicine hasn't changed as much as we might like to think since our Revolutionary army used houses, barns and even churches as field hospitals at such places as Morristown, Valley Forge, Yorktown and Williamsburg. Oh, there have been *technical* advances: helicopters instead of wagons for ambulances, antibiotics and so forth. But it's interesting to note statistics from National Park Service historians that show a Revolutionary soldier had a 98 percent chance of coming out of the average battle alive and a 75 percent chance of coming out of an army hospital alive. As far as I know, those figures would be about the same in modern times.

Food available to the Revolutionary soldier often tended to have adverse effects upon its consumer, as does military chow today. Most diarrhea among troops was brought on by flu or by bolting raw anything that looked remotely like nourishment during a march.

Surgery was really awful in those days. Bleeding

was widely done as a cure-all. Today this is usually called exploratory surgery. Some practitioners, confronted by a puzzling case, were known to hack away at healthy tissue until none was left. When the patient died the doctor would cite an emaciated condition as the cause. This sort of thing persisted from the Revolution to the advent of malpractice suits.

While it is probably safe to assume that a wounded officer was more likely to get prompt service than a soldier, you can see how this could have been a drawback sometimes in those days. During the Battle of Oriskany near Fort Schuyler in upstate New York, in August 1777, General Nicholas Herkimer was shot in the leg. There is no way for a limping general to avoid medical attention. The story goes that poor Herkimer asked the surgeon if he'd ever done an amputation before. "No, I haven't," the doctor reportedly said. "Well," sighed the general, "we've all got to start somewhere." He died shortly after the operation.

The cast-iron cooking pot held whatever the soldiers picked up along the way—a stew partly cooked or raw. But at least the soldier in the Revolution could, under regulated conditions, drink liquor.

Napoleon is supposed to have said that an army marches on its stomach. If he said it, he didn't explain why, and now we have a time-honored bromide which

"We must try to think of them as fellow-revolutionaries."

A full cooking pot

almost everyone accepts today in an unthinking way.

The reason soldiers tend to march, and sleep, and work, and meditate on their bellies is that when they aren't actually fighting they don't have much else to occupy their thoughts. And if this is true of the modern trooper, who has huge support forces assigned to nothing but supplying and feeding him, imagine what a preoccupation food and drink must have been to the American Revolutionary soldier.

Even the British troops, who were part of an organized and well-established military structure, were expected to do a certain amount of foraging and stealing to supplement formal supplies as they went about their business of empire building and defending. In fact, loot in its various forms, including food, has been a major objective of military activity throughout history. The standard, accepted way of attracting recruits in Europe, since nobody ever really wanted to pay soldiers, had been to promise them women and loot.

According to most accounts of the day, the average soldier on an average march would simply pick up odds and ends along the way—hastily tearing an ear of green corn from a stalk and plucking a handful of turnips from a roadside ditch—until he and his friends had enough to fill their pot. (They hoped they would have time to build a fire under the pot.) Often, they

ate their pathetic stew only partly cooked or even raw.

The cooking pot, by the way, was issued to every unit of a half-dozen or so. Although small, it was cast-iron and heavy. The task of carrying it, along with the rest of his own bulky gear, usually fell either to the rawest recruit or the group's goof-up. Possibly one of the ways the British and Hessians could track any large Revolutionary unit, even in the dark, was by stumbling over all the furtively dropped iron pots.

The Revolutionary soldier's canteen was usually a squat keg, with three-inch staves, a propensity for leaking, and a drinking hole in one of the staves which was often mouthed by a half-dozen or so men. Naturally, canteens, being merely objects for human comfort and survival, were in short supply. The reason they leaked: they were so often empty that the wood shrank.

You would have thought that with all the human effort and ingenuity that has been poured into military inventions, someone would have devised a decent canteen sometime around the Crusades. A young, adult male, forced to march 20 or 30 miles to a summer afternoon's battle, wearing a hot uniform and bearing heavy equipment, should have been entitled, at the very least, to his very own, sanitary, comfortably shaped fluid container with adequate contents.

During our Revolution the British were somewhat ahead of us in canteen development. They issued tin containers, which became prized booty. One of our own efforts at improvisation was a glass bottle sewn into a leather or fabric covering. The trouble with a glass canteen, of course, was that if you fell upon it while under fire you might be dangerously wounded.

One way in which the American soldier in the Revolution had it all over his 20th-century counterpart was that he could drink liquor—when he could find it. Sometimes it was even issued as a daily ration. If there were bluenoses who didn't think our clean-cut lads should sully their minds and innards with strong spirits, they kept their heads down and mouths shut.

It is common, even customary, among armies at war for the rear echelons to grab the best rations, clothing, booze, tobacco and equipment. Whatever reaches the front has been pretty well picked over. After all, the reasoning goes, why waste good boots on a man who will merely get them muddy, or send him tasty food if he can't cook it properly and probably will be dead before he can digest it? If you're in the rear echelons and steal more than you can use yourself, you know that there are always civilian "businessmen" lurking in the alleys who will pay well for the surplus.

It's appalling, then, to think what the food and supply situation must have been in Washington's army, especially in the early stages of the Revolution.

It was temptingly easy for officers who received ration allowances for their men to pocket part of it, or go into cahoots with unscrupulous sellers and take kickbacks from inflated prices. In a letter to a relative, dated August 20, 1775, General Washington said: "I have already broke one Colo. and five Captains for Cowardice and for drawing more Pay and Provisions than they had Men in their Companies; there is two more Colos. now under arrest. . . ."

As it was in the beginning (opposite), it still was in WW II. "Drop them cans in th' coffee gentle, Joe," says Willie. "We got a chicken stewin' in th' bottom."

"Are you sure you want to know what's in it?"

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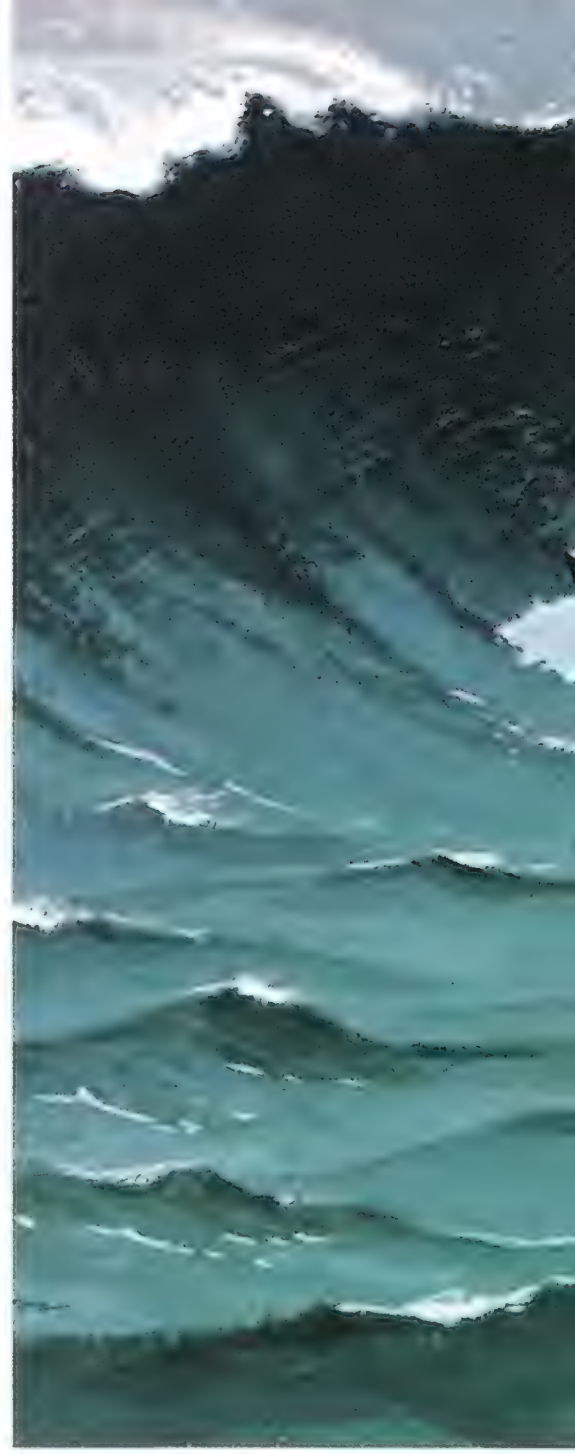
The tanker *Siri* plunges her bow into a wall of water off the coast of Japan during Typhoon Judy in 1963.



In the artist's conception at right a tanker encounters a giant wave of the sort that can form during a storm.

By Peter Britton

Nightmare waves are all too real to deepwater sailors

When a storm heaps the sea into a towering horizontal avalanche, the largest ships in the world are in mortal danger of foundering

Although several other ships came through unscathed, the 44,000-ton *Michelangelo* took a terrific interior beating in that fierce April storm 12 years ago. With 775 passengers, she was suddenly struck by an enormous wave some 800 miles from New York City. The pride of the Italian Line came away second best.

The gigantic wave inundated the entire forward half of the ship, breaking heavy glass 80 feet above the waterline. A large hole was gouged in the ship's curved superstructure. The flare of the ship's bow was crumpled. Forty feet of railing and bulwark were torn away. Seventy feet above the sea, tons of water crushed bulkheads and cascaded into the ship.

Two passengers and a crewman died. Many were injured. Passengers spoke unabashedly of terror as the vast length of the liner "seemed to whip back and forth as though she were flexible." The *Michelangelo* limped into port and thousands of New Yorkers gazed in awe at the twisted metal inconceivably high above the waterline. Could this possibly be the work of a single wave?

The answer is yes, and this kind of open-ocean en-

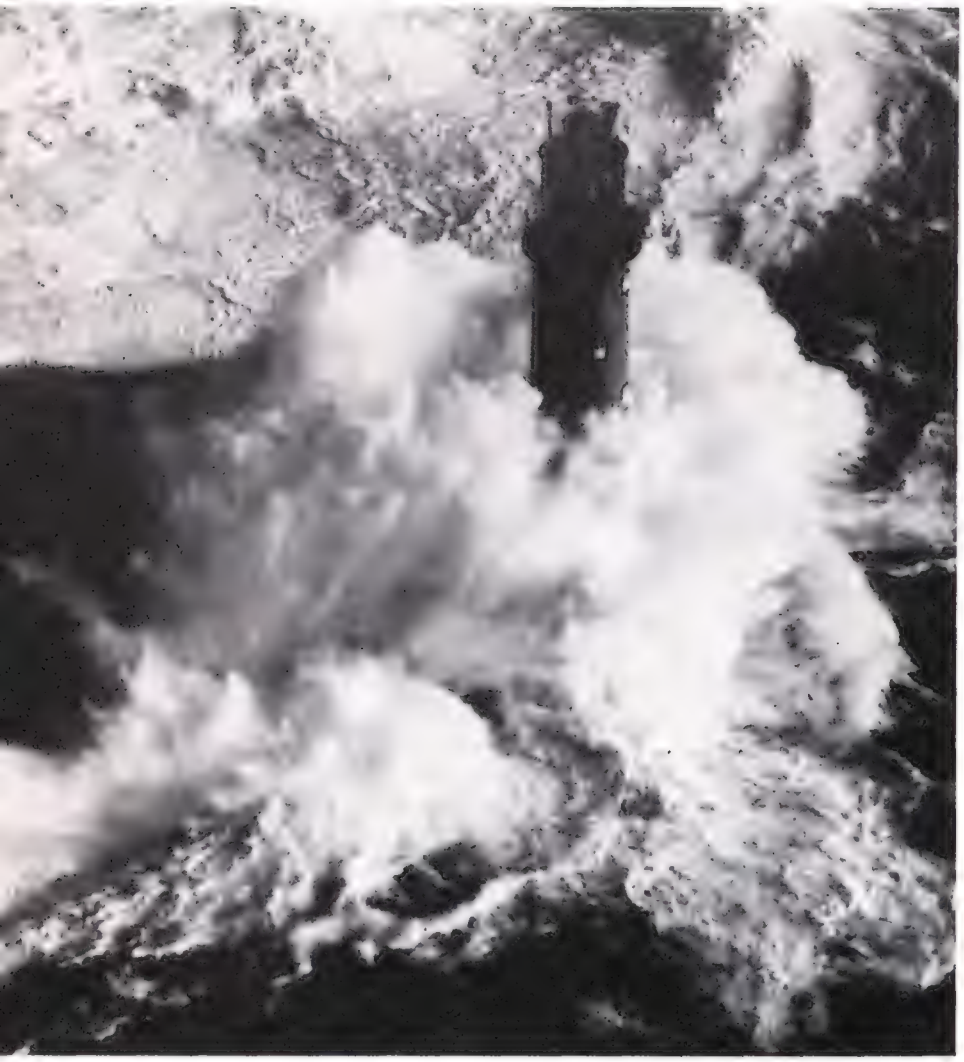
counter is not as rare as it might seem. Thousands of seagoing craft around the world—liners, tankers, trawlers, warships, pleasure craft—as well as assorted offshore structures, have had similar meetings with the scariest and most dangerous of maritime phenomena: the sudden and often overwhelming giant wave that forms unpredictably during a storm at sea.

It was a wave like this that came close to causing what would have been the worst transportation disaster in history, surpassing by tenfold the lives lost in the *Titanic* disaster. Late in the winter of 1942 the English coast was weathering an unusually vicious gale. Seven hundred miles to the west the *Queen Mary* was laboring through extremely heavy seas caused by the same storm. Aboard her were nearly 15,000 American troops bound for war in Europe. A gigantic wave caught the *Mary* broadside. An eyewitness account stated that the thousand-foot, 81,237-ton Cunard liner came within inches of capsizing and "immersion." *The Daily Mail* reported: "She listed until her upper decks were awash and those who had sailed in her since she first took to sea were convinced she never would right herself. Her safety depended on no more than five degrees. Had she gone those inches farther to port, the *Queen Mary* would have been no more."

It is difficult if not impossible for most people to imagine what these waves are like. "Mountainous seas" and "giant" waves are terms essentially meaningless to the layman until they are assigned dimension and given human perspective. Blair Kinsman, I found, could supply the latter and I met with him at the Marine Sciences Research Center in Stony Brook, Long Island. There, in his incongruously snug office, I asked the oceanographer, yachtsman and author about giant waves.

Kinsman gazed at me for a long moment. "Imagine yourself on the bridge of a tanker in a Force 10 gale. And imagine, if you can," he said, carefully limning his image, "imagine a green-black mass, the height of a seven- or eight-story building, maybe half a mile long, suddenly before you, rushing towards you at 50 miles an hour. You're on a roller coaster plummeting down into its trough; this monster towers above you, alive, shifting, breaking, roaring, hunching. There's

Paintings by Pierre Mion



"Normal" storm waves, such as this one hitting the Wolf Rock Lighthouse off England, can be awesome.

In this reconstruction the *Queen Mary,* with 15,000 U.S. troops aboard, is rolled to port by a giant

no place to hide; then it's on top of you. The top third breaks off. Thousands of tons of deadweight water hurtle down on you."

Giant ocean waves formed by the wind are known by a number of names: freak, rogue, solitary, phenomenal, episodic and pyramidal. The most chilling term of all is the "non-negotiable wave" of the yachtsman. They are neither tidal waves nor tsunamis. The latter (known incorrectly as tidal waves) are caused by undersea earthquakes or volcanic eruptions. In the open ocean tsunamis are practically undetectable, traveling at speeds up to 500 miles an hour and in heights of a few feet. When tsunamis reach shore they slow down and steepen, sometimes into waves that tower 100 feet and cause extensive damage.

Knowledge of waves in general, of course, has been of utmost importance to mariners and shipbuilders for centuries. Yet there was little intensive scientific study on the force of waves, or on how to predict their size. It took World War II to start that. Perilous troop landings on unknown enemy shores made study of wave conditions vital. Structure and behavior had to be understood to assess occurrence and impact. These studies led to further work on open-ocean waves.

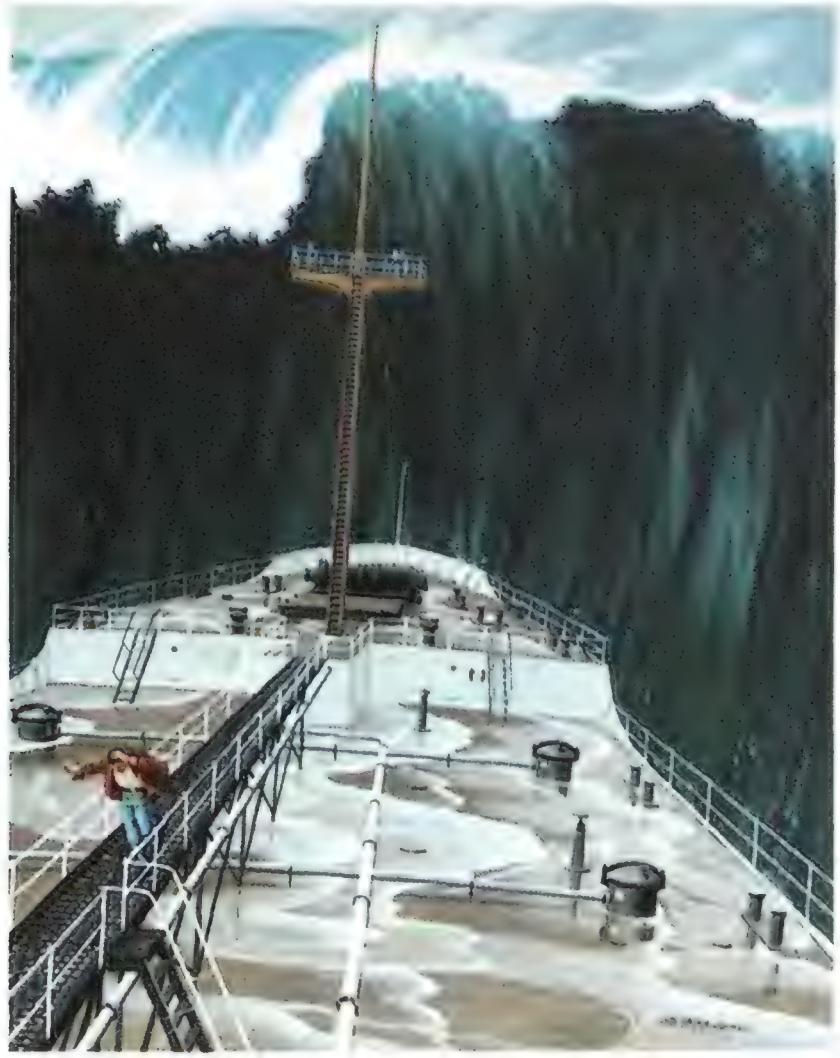
But giant waves were something else, a breed apart, as elusive as the giant squid and possessed of a mythic aura. Current knowledge comes from actual, though rare and often disputed, observations through the years; from at-sea measurements taken by devices and trained personnel on weather ships and offshore oil rigs; from the results of a wave's onslaught on vessels; and from extrapolating the meteorological records of hurricanes, typhoons and North Atlantic winter gales.

Basically, waves are built by the action of wind on water. They travel in trains of varying frequency and energy and speed. Two wave trains going in the same direction can eventually get "in step" for a moment and produce a wave that is higher than either component. Infrequently, three or more wave trains get in step, concentrating their bulk, energy and motion in one wave that is exceptionally high.

This "combination" or giant wave will live for a minute or two until the components separate. In a stormy sea, where waves are large to start with, the results can be a transient, awesome, turbulent heap of water well over a hundred feet high that bounds

A former newspaperman, Peter Britton is a New York free-lance writer specializing in stories on science, technology and energy.

wave. Eventually the top decks were awash and the ship was within five degrees of going under.



The bow lookout runs for his life as a rogue wave threatens his ship; the view is from the bridge.

along, sometimes breaking, in a kind of horizontal avalanche—and then quickly dissipates after several minutes' life, and dies. The laws of probability say that this is certain to occur, but they say nothing about where or when.

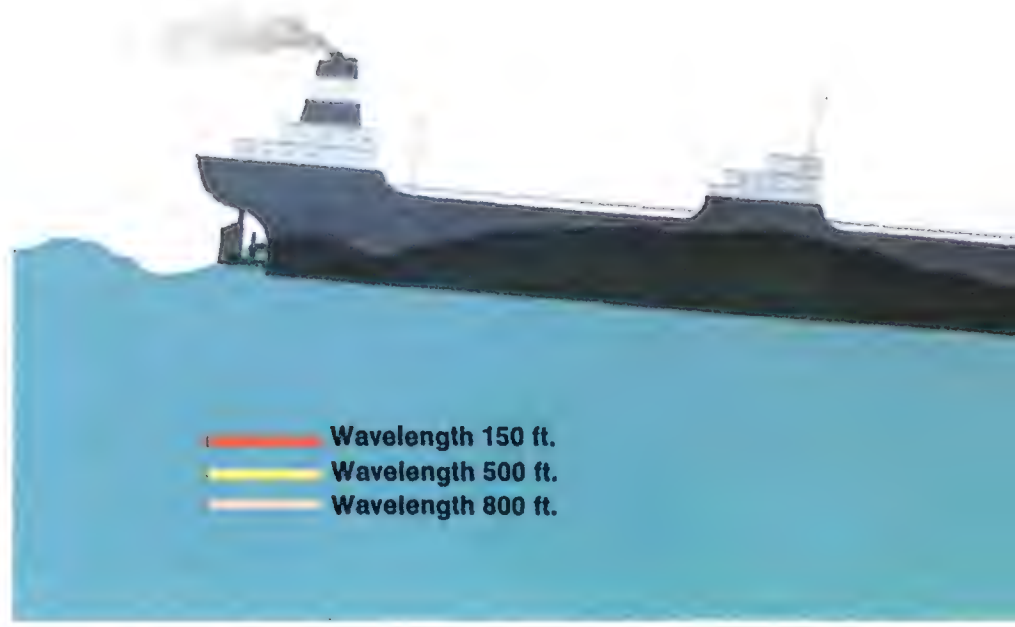
Many elements come into play. The intensity of the wind; the length of time it blows; the distance over which it blows (the "fetch"); prevailing weather conditions; sea and air temperature; a series of closely spaced storms; swells arriving from storms in remote regions; sea currents; bottom topography—all these factors can affect sea state and hence giant wave formation. The complexity is such that even present-day computers are unable to handle it and tell ship masters what they would dearly love to know: exactly when and where the giants will strike.

Out of this tangle of possibilities there appear to be three types of conditions under which giant waves form. There are the deep-sea storm waves resulting from coinciding trains. There are waves formed along continental shelves where topography, current and weather factors conspire to heighten and steepen waves and provide a dangerous preceding trough. And there are "pyramidal" waves that form abruptly in relatively shallow areas, as refraction from bottom or shore features causes two wave trains to intersect.

Research on waves is being carried on today by many private and governmental agencies, and indeed has become a billion-dollar business. Most vigorously pursuing the truth about wave heights and forces are those most directly affected: the oil companies and their partners in offshore exploration. The reason is twofold. Offshore platforms and other structures can't sail around storms, as can ships, and must be built to withstand the worst that nature can stir up. And waves from ten feet on up tend to disrupt operations and can cost a company up to $100,000 per day.

When the first offshore platforms were built in the Gulf of Mexico after World War II, the power of the great waves was grossly underestimated. Maximum wave heights for the Gulf of Mexico, for example, were thought to be 40 feet during hurricanes. But a number of offshore catastrophes, including the Texas Tower tragedy (an Air Force radar platform in the ocean off New York City that was washed away with a loss of all hands), soon proved that some waves got far bigger than anyone had thought.

Offshore oil structures are now designed for the maximum wave (the so-called 100-year wave) that could occur within an area in the 30-or-so-year life of



In this sketch a tanker encounters three wave trains, each with a different distance from crest to crest. When the wave trains get "in step," as is happening

the structure. This means that in addition to structural strength there must be enough room for the maximum wave's crest to pass beneath the vulnerable deck. In the North Sea, for example, this wave is now thought to reach about 111 feet (the highest so far actually measured there is said to be 75 feet).

Dr. Willard Pierson of the City University of New York's Institute of Marine and Atmospheric Sciences has a deep interest in waves and their effects. On a recent sabbatical he did some research for the Intergovernmental Maritime Consultative Organization (IMCO) and its ad hoc committee for the study of external forces affecting ships at sea. He was particularly interested in the distress of ships off northern Europe. Two examples caught his eye. In the winter of 1965 the trawler *Blue Crusader* disappeared 25 miles east of the Orkney Islands, and the trawler *Boston Pionair* disappeared midway between England and Denmark off Dogger Bank. Authorities suspected that both vessels were "suddenly overwhelmed by the sea."

Pierson found that in these two cases wave refraction, or bending, was the culprit. Relatively shallow bottom contours affected waves in each area in two ways. They increased waves to a significant height of as much as 36 feet. One wave in a hundred could reach about 55 feet. But, more important, these already high waves, refracted by variations in underwater topography, would advance on a hapless vessel from two directions at once. If the one-two punch of the waves didn't get it, the massive pyramid that was formed as they coincided would.

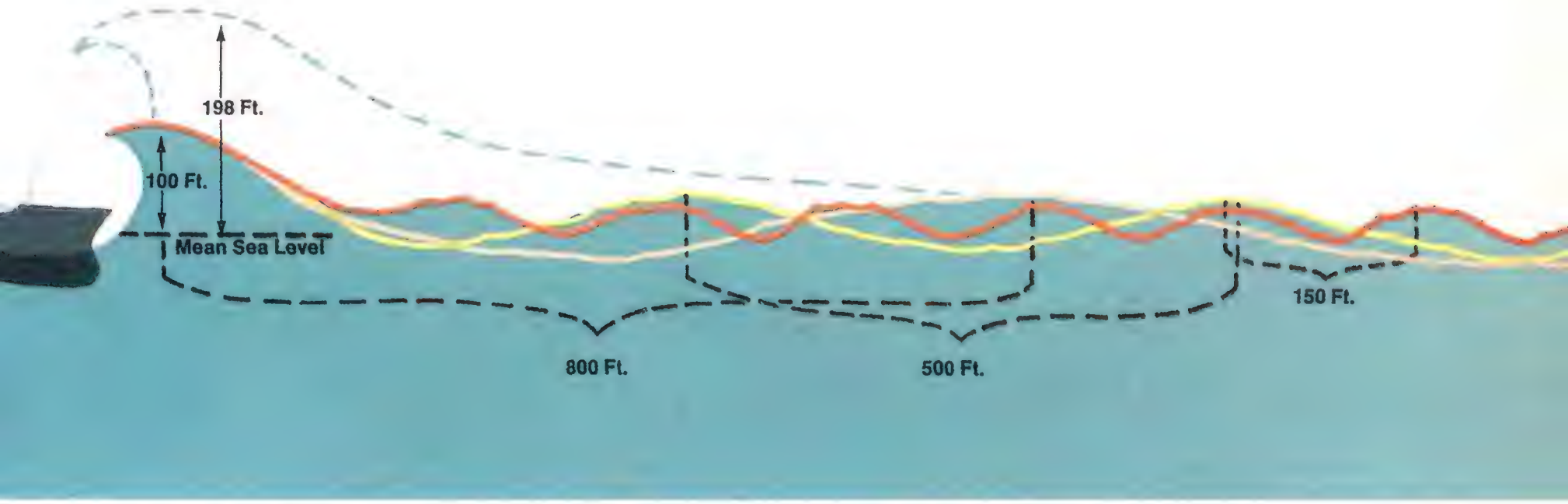
Refraction of waves is a special case that applies in precisely defined areas. Another set of circumstances surrounds the waters off North Carolina's Cape Hatteras, which have been known for years as "the graveyard of the Atlantic." Quick storms, tumultuous seas, opposing current, shoals: all combine to destroy vessels sailing along the coast.

Perhaps the most tragic of recent Hatteras tales is that of the *Texaco Oklahoma*. In March 1971, the 632-foot tankship was carrying 222,000 barrels of fuel oil from Port Arthur, Texas, up the coast to Boston with a crew of 44. She had run into bad weather off Florida. The weather deteriorated steadily and by ten o'clock on a Friday night she reported whole gale conditions: winds were blowing from the northeast at 70 miles an hour and waves up to 40 feet were washing over the decks. The ship, according to the National Transportation Safety Board, was "rolling and pitching moderately to heavily," proceeding at the greatly reduced speed prescribed for such conditions.

"During a combined forward pitch and starboard roll at 0330 Saturday," the report said, "some of the crew members on the stern section heard a loud 'crack' followed by a 'bumping' sensation a few seconds later." The *Texaco Oklahoma* had broken in two, just about amidships. None of the 13 crew members on the bow section survived. The stern stayed afloat for 27 hours. Thirty-one crew members died, including all of the officers.

The exact cause of the ship's splitting in half may never be known for sure. But Dr. Richard James of the Naval Oceanographic Office in Washington has an intriguing theory which may explain why the waters off Hatteras are so treacherous. James has found that storms of the same size can vary greatly in intensity. They are most intense, he feels, when there is a pronounced temperature difference between air and water.

Northeast of Cape Hatteras, in precisely the spot



just in front of the ship, a wave much larger than its components forms briefly. In more severe sea conditions, a giant wave could theoretically reach the height of the dotted line at top. In advance a trough would form, into which the ship, like many before it, could vanish.

where the *Texaco Oklahoma* broke apart, a complicated ocean-air temperature exchange takes place in the winter months. The "north wall" of the Gulf Stream is a narrow band of extreme horizontal temperature change. In February and March the temperatures to the north are at their coldest while the Gulf Stream remains warm, a difference of some 30 degrees. As frigid air from the north passes over the Gulf Stream, it is warmed, rises and is replaced by colder air. This colder air brings down strong winds from above, creating still rougher seas.

There is no doubt as to the cause of a long string of accidents and losses off the southeast African coast. There mariners have reported frightful waves and accompanying "holes in the sea" for more than a century. With the closing of the Suez Canal in 1967, tankers and other ships had to go around the Cape of Good Hope, joining the larger tankers that were too big for the canal. They all were sitting ducks for the monster waves—especially so the oil tankers. The ships were lying low in the water, heavy with Middle East crude, riding the swift Agulhas Current in an effort to save time and fuel, semi-ignorant of the potential for disaster that lay ahead. The conditions were right for the inevitable. It was the loss of the 28,000-ton tanker *World Glory* in 1968—broken in two and sunk by a giant wave 65 miles east-northeast of Durban—that should have sounded the final alarm and made the area off limits under certain weather conditions. It did, at least, start J. K. Mallory, professor of oceanography at the University of Cape Town, on his definitive study, "Abnormal Waves on the Southeast Coast of South Africa."

Mallory found that a certain sequence of weather events and ocean activity was needed to create the maximum waves that do the most damage. A falling barometer, a fresh northeasterly wind, a sudden change to strong southwesterly wind—these can combine to create ten-foot local waves. Other waves called Cape Rollers sweep in from storms in the remote Southern Ocean. These superimpose on the local waves, and the large resulting waves now run up against the swift Agulhas Current, moving at up to five knots just outside the 100-fathom line. Waves 60 feet high and more with precipitous faces can result.

The combination, reports Mallory, is extremely dangerous. With a large vessel, he wrote, there is often a tendency to believe she can plough through the normal sea (up to 25 feet) at full speed. "Without any warning the bow falls into a long sloping trough, probably greater than the length of the ship, so that she virtually ends up steaming downhill with increased momentum."

The result is amply illustrated by the case of the Norwegian tanker *Wilstar*. On May 17, 1974, the 132,000-ton vessel, fully loaded with crude oil, was moving in a southwesterly direction at reduced speed in gale conditions off Durban, South Africa. She was in the right spot, ten miles east of the 100-fathom line where subterranean canyons cut into the continental slope. The weather was right; a low had moved across South Africa and caused an abrupt wind change hours earlier. And sure enough, a giant wave was there.

It nearly sank the *Wilstar*. The master reported that the waves were coming in sequences of seven. In one sequence the seventh wave did not hit them; instead,

there was "no sea in front of the ship, only a hole." The bow fell into the hole and then the seventh wave, higher than the bow and very steep, crashed onto the ship, submerging the bow and main deck. The *Wilstar* lost her bulbous bow. Steel hull plates almost an inch thick were torn away. Beams thicker than railway tracks were snapped. The damage: $1.2 million.

Halfway around the world scientists and mariners are coming to grips with a different, and perhaps worse, set of giant waves in the increasingly important Gulf of Alaska. There, a group of 13 oil companies is conducting a four-year, $1.8-million wind and wave measurement study. Wilfred McLeod, coordinator of the oil company study, says that extreme waves there are no higher than those in the northern North Sea: around 100 feet. But the investigators have also made an estimate based on the characteristics of the worst storms that have traversed the area in the last 20 years. Their conclusion is that the maximum possible wave could reach an incredible 198 feet.

The giants continue to roam the world's waters. Less than two years ago, some 400 miles southwest of Bombay, India, the Cypriot tanker *Cretan Star* vanished, leaving only an oil slick and a final radio message reporting that she had been hit by a huge wave. In December 1976 the 18,700-ton Panamanian tanker *Grand Zenith* disappeared in a storm 30 miles east of Cape Sable, Nova Scotia. The suspicion: a giant wave snuffed her out.

A giant wave washing over the deck of an offshore drilling platform could be fatal to all on board.

This 132,000-ton tanker lost its bulbous bow in an encounter with a giant wave off South Africa.

WILSTAR

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These male polar bears had dug dens at left to wait out a blizzard on the shore of Hudson Bay; they jumped out at the approach of a helicopter. When the bay freezes, they'll spend winter on the ice.

By Richard C. Davids

Polar bears aren't pets, but this town is learning how to live with them

Long thought solitary animals, these fierce mammals grow quite chummy with each other and people while waiting for the ice of winter

Found close to town, this bear was so sleepy it never noticed a firecracker exploded over its head.

Last fall when Moe Bellerive, a voluble French-Canadian, was making repairs to his summer cabin a few miles out of Churchill, Manitoba, he spotted a big gaunt polar bear sniffing at the doors of nearby cabins. A stone's throw from his door is an aging phone booth, its door long gone, and Moe hurried to it. With his first dime he reached his wife. Just as he heard her answer, he was suddenly aware of two things: that he lacked a second dime to complete the connection, and that the bear was just outside, eyeing him closely. "Hello, hello, hello," he could hear his wife say, and then with exasperation, "another wrong number!" as she hung up. His dime returned, he reached the operator, who summoned the Mounties, who rescued Moe from his precarious refuge.

At the Legion Hall, a bear walked in at midday and ambled toward a crowd of dart throwers until the club steward, an old British army major, shouted, "You're no member. Get out!" The bear left.

When an airline agent and his family were sitting down to dinner in their summer cabin, a bear leaped through the window and started helping himself at the family table until the agent beat him out of the house with a two-by-four.

The trouble at Churchill is that, from September on for several months, polar bears walk the streets any hour of the day or night, sometimes followed by a crowd of children and dogs and picture takers, taxing the efforts of Mounties and conservation officers to keep Man and beast a safe distance apart. The task would be easier except that no one wants to shoot the polar bears, for they are threatened with extinction. In the world there may be no more than 12,000 of the splendid animals still alive.

Churchill, a village of 1,600 perched atop a ridge of low, rounded rocks on the western shore of Hudson Bay, is the end of the line for a railroad bringing wheat from the Canadian prairies to be loaded on ships for Europe. It is also the end of the line for an age-old migration of polar bears, which every summer follows the coast north for two or three hundred miles to Cape Churchill, 40 miles east of town, where the big males wait for winter. Young bears and females with cubs are pushed on westward along the water's edge into town.

The situation is incredible: a town on the migration path of what many naturalists believe to be the most dangerous carnivore in North America. The

Photographs by Dan Guravich

Polar bear capital of the world

A young male, caught in a trap in the center of Churchill, was moved to the airport where

Arctic explorer, Vilhjalmur Stefansson, called the beast far more dangerous than the grizzly, an eater of vegetables and fish. The polar bear lives almost solely by hunting, and Stefansson attests to its skill. Once, when he thought he was stalking a bear, he heard—barely in time—the hiss of that same bear no more than 20 feet away stalking him! He wrote in 1921: "It is possible that polar bears would avoid men if they knew what we were, but they so frequently mistake us for seals that it makes little practical difference."

Nowhere else are polar bears more concentrated than at Cape Churchill, for several reasons. In winter, bears strike out north and east over the ice for a hundred miles or more to hunt, but constant north winds and current keep moving the broken pack ice south, and along with it the bears. As the ice melts during summer, the last of it hangs up on the shallow flats on the southwest rim of the bay, and here in July the bears are forced ashore. A few move inland, but most migrate north along the coast for a simple reason. Ice —which means seals and a resumption of hunting—forms two and even three weeks earlier at Churchill, because of dense freshwater ice that forms in the broad Churchill River and is discharged into the salty waters of the bay. Biologists say that bears sense this and wait there for the freeze-up. In contrast, bears in the high Arctic can spend the whole year on pack ice.

Only in the last dozen years have bears been a serious problem at Churchill, even though the town dates to 1771 when a fort (then the most northerly in the Americas) was built to guard the mouth of the river. Bears that used to wander into town were simply shot as food for sled dogs, and their hides sold. World War II brought a U.S. air base, and polar bear skins became a prize to be smuggled back home (only Eskimos and Indians could shoot bears). After the base closed, bears began to increase.

Elsewhere in the world, polar bear numbers were dangerously low. Whalers had all but exterminated them in the Bering Sea and along the Labrador coast. Mothers with cubs were killed in their dens. Hunters in aircraft scouted the Arctic for trophies. In 1964 the world kill was 1,300. It was the Soviet Union, as far back as 1956, that first put a stop to all hunting and pushed hard for a meeting of the five polar bear nations: Russia, Norway, Denmark, Canada and the United States. In 1965 the representatives of these countries met in Alaska to take the first steps aimed at forestalling extinction, and in 1973 the nations ratified an agreement to limit hunting to Natives.

There was a bear at the Churchill airport last October when photographer Dan Guravich and I flew in; the same one that had beleaguered Moe Bellerive was wandering idly about. As we rode in the bear patrol truck with Roy Bukowsky, a conservation officer, the radio crackled in gangbuster style to warn of another bear in town that morning, a beautiful

A former magazine editor and lifelong naturalist, Richard C. Davids has written several wildlife books, the most recent being How To Talk To Birds.

residents and a busload of visitors watched as some biologists tranquilized him and tagged an ear.

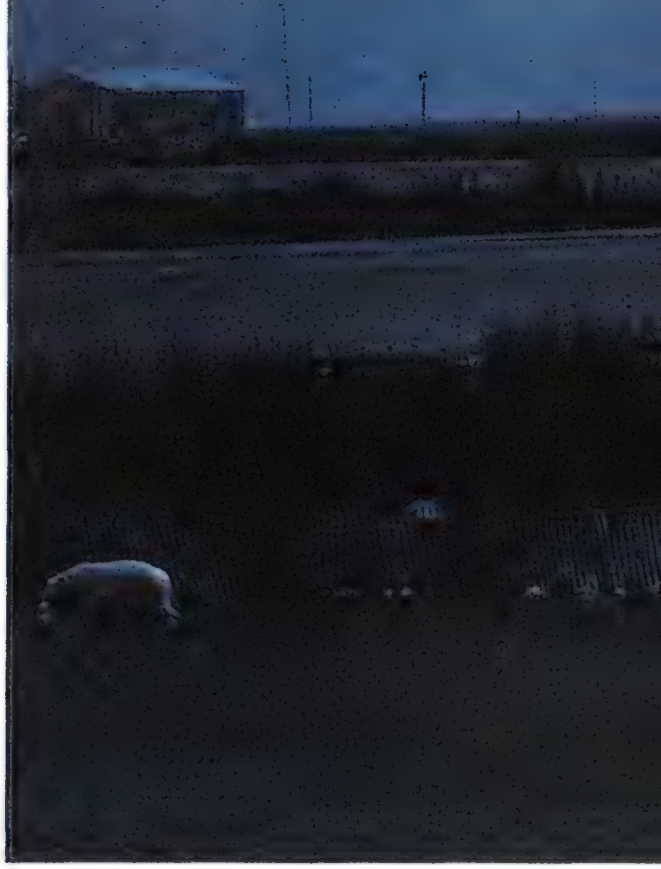
snow-white animal (some have a yellowish or darker cast, effected by both seasonal changes and heredity) that we found asleep beside a kitchen and that looked no more dangerous than a child's oversize toy. Conservation officers chased him off with a device like a giant firecracker. When school was dismissed, a crowd of children ran after two bears near the building, pelting them with rocks until Roy and his colleagues called them back. The next morning, a trap (one uneasy block from our hotel) held a young bear that was tranquilized, measured and flown out of town (above, right). The following night the Mounties answered a bear call and when they came to the last house on the street, it was a bear that had come to the window to look out. Routed with noisemakers, it played hide-and-seek with the conservation officers for the next half hour, dodging behind a motel one way and the other, finally hiding inside an abandoned bus.

Polar bears are magnificent animals, with a dignity born of an utter lack of fear. Big males weigh half a ton, measure eight feet long and five feet high at the shoulder. Yet for all their size, they glide across the ice with a fluid grace. Their heads jut forward like gargoyles. Standing erect, as they often do, big ones are

Scientists have about an hour to weigh, measure, mark and transport the bear at left out of town.

The bear will be flown far to the south of Churchill; some are back in town as little as two weeks later.

A young bear (right) on his way to the new ice on the bay scents another and will make a wide detour.



At the airport a bear (above) scavenges for food. Biologists tranquilized it and discovered it

up to 12 feet tall, twice the height of a man, but they somehow resemble Man as they peer out across the ice. It is then that polar bears seem possessed of preternatural wisdom. Little wonder that to older Eskimos the polar bear, or *nanook* as they call it, is a shaman, in close communion with the unseen world.

Until recently, polar bears were creatures of mystery, known only to Eskimos and explorers traveling vast expanses by dogsled and snowshoes. But, at Churchill, bears literally come to the doorstep of researchers. One man about to enter his hotel had to pass what he took to be a snowdrift two feet from him; then it moved.

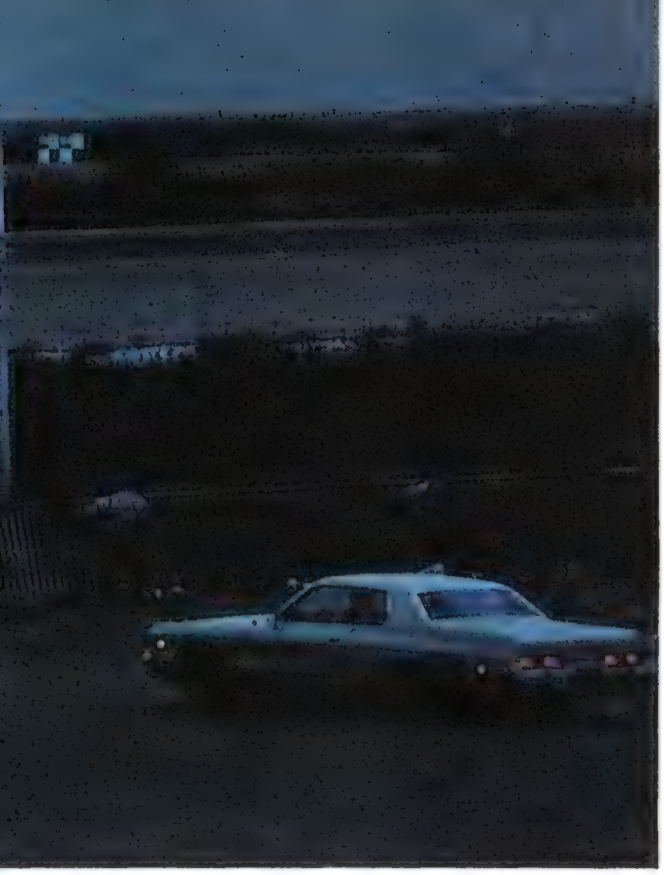
Principal researchers at Churchill are Dr. Charles J. Jonkel of the University of Montana, but formerly with the Canadian Wildlife Service; Dr. Ian Stirling of the Canadian Wildlife Service; and Dr. Nils Øritsland of the University of Oslo, Norway. Their graduate students, along with conservation officers under the direction of Dick Robertson, capture bears in snares or culvert traps, ear-tag, tattoo, weigh, take blood samples, extract a small tooth (a cross section reveals age the way tree rings do) and paint bold numbers on their sides for identification at a distance.

Ear-tagging studies indicate that polar bears are not nomads carried by pack ice from one nation to the next, as once believed, but are strongly resident. Of 254 tagged in Churchill, 14 were killed in the Northwest Territories just above Manitoba, one across the bay at Ivugivik in Quebec, and one at Coral Harbour to the north. Of 52 transported south by plane, almost half made the 250-mile return trek the following year, three within two weeks, and a mother and her cubs in 18 days.

Bears are wonderfully equipped for their rugged existence. Except for the worst blizzards, which they wait out in temporary dens in the snow, they come to life as the weather grows colder, sliding down snowbanks with the same pleasure as an otter. A dense fur that feels like fleece covers them completely. Even the soles of the feet are densely set with hair. The fur covers a skin almost as black as their coal-colored noses. As further insulation, fat often four inches thick covers much of the body. Across the shoulders outside the fat layer, Dr. Øritsland discovered a thin sheet of muscle controlling blood vessels that open to permit heat to escape when the bear is hot, and that constrict in cold weather. A grown male is powerful enough to snatch up a 200-pound ringed seal with the ease of a cat catching a mouse, or to kill a 500-pound bearded seal with a single blow of its 50-pound paw. And bears are swift. A young one was clocked galloping along a road at 35 miles per hour. They can swim six miles an hour and can go nonstop for a hundred miles or more.

Their sense of smell is legendary. Eskimos maintain bears can scent a seal 20 miles away. Roy's pickup with its lingering smell of bait is a magnet. Once he started out from his downtown office with a bear aboard.

Bears hunt by lying in wait at the breathing holes of seals, pouncing and retrieving them through the smashed ice. When open water appears and seals bask on the ice, a bear may stalk them, creeping forward as the seal dozes. Eskimos say that a bear may push a chunk of ice ahead of it when there is no other concealment. A bear can ease itself into the water with scarcely a ripple, swim under water or with only its black nose showing, and surface silently beside a sleep-



had been shot perhaps a month earlier, had a broken jaw and was unable to eat. They killed it.

Big males wait all summer at the sites they favor most, east of Churchill, for Hudson Bay to freeze over.

ing seal. Bears have been known to kill walrus, narwhals and even beluga whales. They normally eat only the blubber, leaving the rest for young bears unskilled in hunting, and for scavenging gulls and Arctic foxes. After feasting, they wash carefully.

Polar bears are notably slow in reproducing, breeding in alternate years. As with other bears, the fertilized egg doesn't implant itself in the uterine wall until two months before birth. About that time, through some miracle of hormone-dictated behavior, the female digs a maternity den or seeks out an existing one. Such a den consists of a room deep inside a snowbank and with a narrow downslope entryway that hoards the heat. Some dens may have two or even three rooms, with a breathing hole to control temperature. Eskimos have long told how bears plug the aperture with snow to save heat during coldest times, a fact corroborated by zookeepers. Dens may be 40 degrees warmer than outside.

Much of the time the bear sleeps, and although her heart rate, respiration and metabolism drop considerably, her sleep is not hibernation. Her temperature stays constant and, unlike true hibernators, which need several days to awaken, bears can spring into action almost instantly. In December or January the young are born—blind, hairless, a pound and a half in weight, more fetus than young animal—and begin suckling milk as rich as the condensed variety.

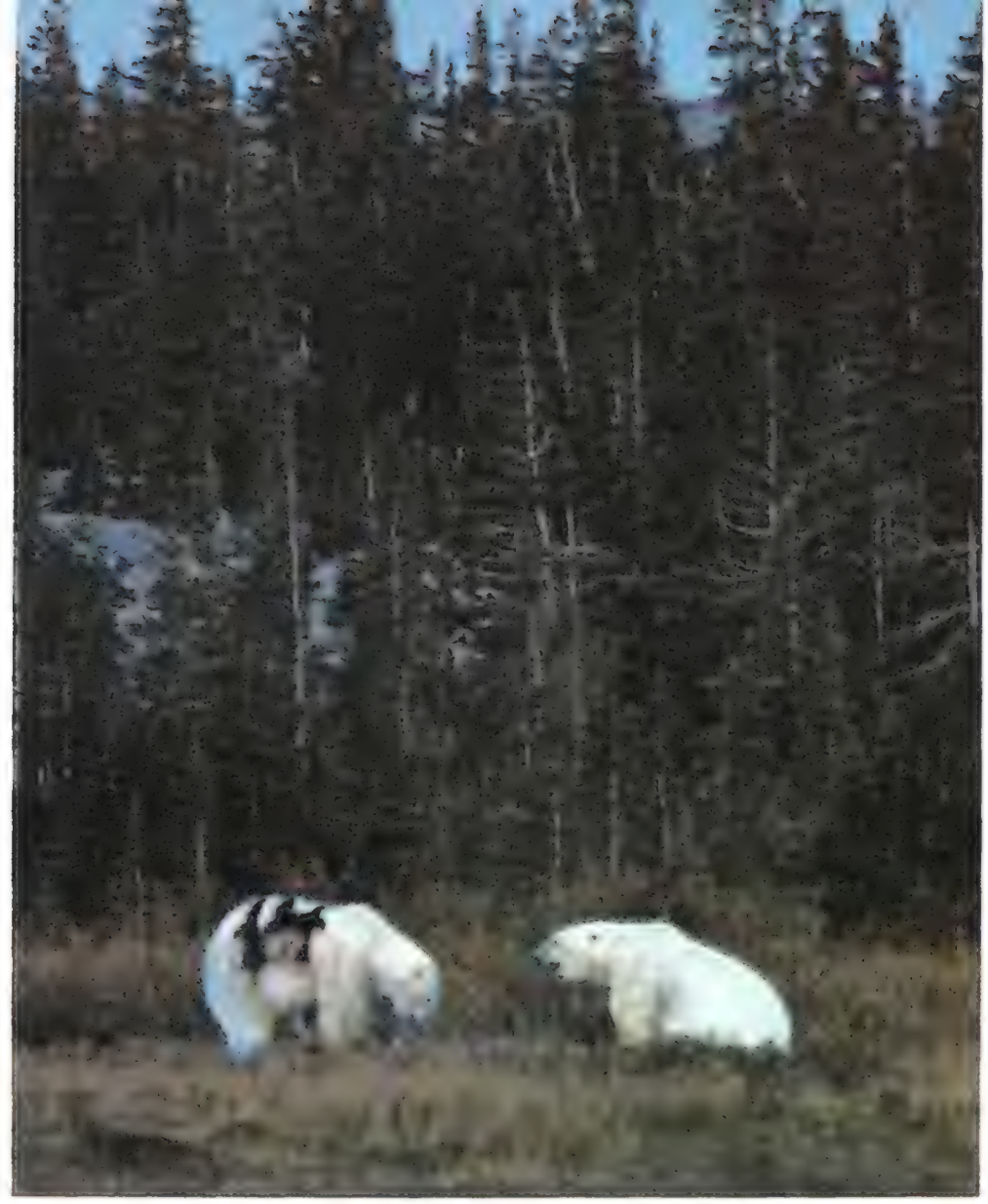
Few mothers in nature are so devoted to their young. A polar bear will attack anything in her cubs' defense. In March, when she introduces her blinking young to the bright outdoor world, she starts a trek to the sea, stopping often to let the cubs nurse and crawl on her back to warm their feet. Sometimes they ride on her back; in the water, they may hitch a ride, clinging to her tail. Despite such care, the first few months are critical in the life of a cub, and in order to learn more about this crucial period biologists have searched for maternity denning areas. Indeed, Alaska offered a $200 reward for every den found.

Little by little they were found: in Alaska, on Norway's Svalbard Island, on Wrangel Island above Siberia, on Southampton Island at the north edge of Hudson Bay and on small islands and peninsulas throughout the Canadian Arctic.

Scientists were unaware of such an area no more than 40 miles from Churchill until ten years ago, when a party of trappers went inland by dogsled to hunt beaver along the Owl River. They saw bear tracks, and just as one trapper, John Spence, was about to make a set, a bear was at him and with one blow tore off his arm. He escaped with his life after being hauled by dogsled, freight and passenger train and plane back to Churchill.

Later, when Dr. Jonkel visited the area by snowshoe, he thought he must be dreaming. There were dens everywhere—in the snow, along stream banks and in mounds of peat upthrust by permafrost. Some were barely ten feet apart. Flying over after every snowfall, he counted tracks from dens to the shore ice. In 1974 some 89 bears emerged with 168 cubs, making Owl River one of the biggest denning areas in the world.

At Churchill mothers and cubs reach the ice just as ringed seals are giving birth in lairs deep below the snow, and during the two weeks that young seal pups can't swim, they are easy prey for bears. In late winter and spring, therefore, polar bears lay on their heavy coat of fat—the reverse of grizzlies and black bears,



Near the airport, a large painted male engages another in what looks like a real battle, but is

which fatten in summer and fall for their winter sleep.

Though polar bears do feed on berries, seaweed, young, disabled or molting birds and an occasional whale washed ashore, their nutritional needs in summer are probably minor. As we watched 25 big males at the Cape from a 40-foot tower, they seemed more bored than hungry, sleeping or strolling through flocks of willow ptarmigan. Two spent the day wrestling, mock fighting and resting. Only when the helicopter with its tagging crew came near did they hurry away. There were bears loafing everywhere along the coast. In an hour in a plane, we saw 67 beautiful animals, resting in the willows just back of high water or curled asleep in beds of kelp.

Dominant males take up the favored, windswept posts on the Cape and offshore islands. (Jonkel once saw 36 big males packed into an area no bigger than a football field.) Smaller bears are forced inland, where to keep cool and escape mosquitoes they gouge holes in the peat down to permafrost, digging deeper as their body heat thaws the walls. Some summer dens extend 30 feet, and appear to have been in use for a great many years.

The density of bears at Churchill, in Jonkel's opinion, is causing them to evolve a new kind of behavior —they are changing from solitary mammals into social, if not communal, animals.

How dangerous are polar bears? Stefansson said, "With all their strength and splendid weapons of teeth and claws, they are generally retiring." When they see a man for the first time, it is probably more curiosity than aggression that makes them draw closer. It is something else when a bear is angry. Annoyed by the barking of the only remaining team of huskies in Eskimo Point, a bear recently moved down the line of chained dogs, killing each one.

In all, at Churchill there have been two mauling incidents and one death. In 1966 a young bear attacked a 12-year-old boy and the next year another attacked two Cree Indians at a settlement near town. The following year a young male bear killed a 19-year-old Eskimo man. All the bears involved were killed by the Mounties, and Dr. Jonkel investigated each case. The autopsy of the first bear showed it had been shot earlier in the year, driving a tooth into the nasal passage, blinding one eye. On the day of the attack the animal had been shot repeatedly with a .22 rifle. The second bear, though uninjured, had been loafing around town for two months and had little fear of men. The third bear had been asleep in the rocks of the schoolyard when the young Eskimo and two friends—not seeing it—all but fell on its back.

Nevertheless, bears do kill even though unprovoked. Last fall a party of 16 hikers on the Norwegian island of Svalbard was set upon by a bear that killed and ate one member while the others could do nothing but watch. In the last three years, bears killed two men on oil rigs off the Mackenzie River delta. Just after we left Churchill, an airport employee narrowly escaped death. Guiding a plane on the ground, he was mystified that the pilot kept blinking his lights. By chance he shone his flashlight over his shoulder and

mock fighting. Bears spend hours at it, belying the long-held view that they are solitary.

saw a bear charging, not five feet away. He ran toward the whirling prop—it seemed a lesser danger—but slipped on ice just as the bear took a giant swipe at him. The pilot revved his motors and the bear, a mother with young, took off and rejoined her cubs.

Despite the very real dangers of polar bears, most Churchill residents wouldn't have it otherwise. Dr. Sharon Cohen of the Churchill clinic says: "Nothing unites the people of town as much as polar bears. We love them." Moe Bellerive says, "I've seen hundreds of bears, but never a belligerent one." And though they ate his ducks and broke into his cabin, he says, "That was only once in 15 years." Resident Doug Weber says, "I only wish they'd go out the same hole they come in." His goose-hunting cabins were broken into six times in one winter. Invariably, he says, they make a new hole in the wall or window or door when they leave. If bears increase and proposed control measures don't work, Weber favors limited hunting to make bears more wary. Some of his friends counter: How does a dead bear learn to be wary?

At the town's only café you hear comments like these: "Bears were here long before people." "Dogs are more trouble here than bears." The village council has no intention of eliminating bears, which add flavor, distinction and excitement, something frontiersmen have always cherished.

Last fall the first polar bear tour of a dozen Americans flew along the coast in helicopters and their enthusiasm for what they saw may prompt Canada to create one or more bear-watching towers expressly for tourists. From such towers visitors could see not only bears but ptarmigans, snowy owls and that superb bird of prey, the gyrfalcon.

A few businessmen see the potential in tourism, but for the most part, Churchill simply likes its bears. To those who look for easy solutions, it must seem incredible not to exterminate a dangerous animal, just as California killed off its grizzlies. But Churchill is determined that bears and people coexist, and to that end there are slide shows and lectures at school, and next year a bear patrol of pupils who will check for the presence of bears before school dismisses. Phone directories list bear-alert numbers. At Halloween, to safeguard trick-or-treaters, volunteers ring the town in cars with shortwave radios. Garbage remains the major problem. Bears love its smorgasbord of smells and tastes. Last fall a bear walked into an industrial kitchen at the harbor, spurned a fortune in pork chops, and walked out with a bag of garbage. An incinerator to burn all garbage at the dump didn't work. Bears climbed over trucks, barricaded the entry and several times sent workers scurrying up ladders until help arrived.

Visitors are full of solutions. Move the dump far inland, or better yet, move the town. Fence the town with high netting or electric wire. Fly bears away. (This last is being done at $500 a bear, paid for by the International Fund for Animal Welfare.) At present, troublesome bears—that keep returning to town and refuse to scare—are being killed. Two years ago, 19 were shot by conservation officers and another ten by Indians and frightened homeowners; last fall, only four were shot. Next year a Quonset hut with a capacity of 25 bears will be readied; there troublemakers can be confined until freeze-up, at which time it is hoped they will take to the ice.

Bears now holding their own

It seems apparent that bears in Hudson Bay are increasing. How about their future worldwide? The Soviets believe that populations on their Arctic islands have stabilized, as is also the case for Greenland and Norway. Canada considers its bears to be fairly secure, and allows 600 to be "harvested" by Eskimos and Indians by special permit. These licenses can be sold to sport hunters, but generally are not, since hides bring an average of $1,500 each.

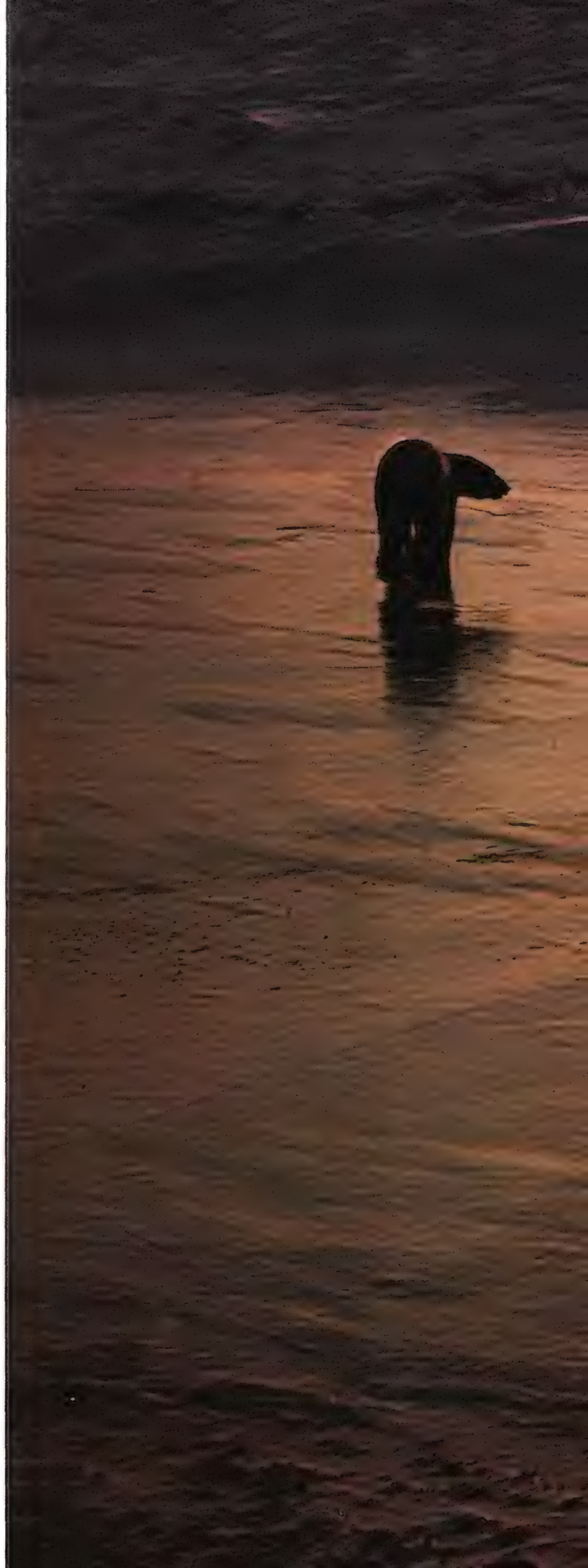
Despite an annual world harvest of 900 bears, there

are pressures for an increase in hunting. Alaska wants the federal government to return control to the state, which would allow both recreational and subsistence hunting, with an open season from January to June and a bag limited by permit to one bear every four years. Alaskan subsistence hunters could take one bear a year for food without permit. Norway's five-year moratorium on hunting ends this year.

Both Jonkel and Stirling favor hunting where bear populations grow too dense for human safety or the bears' own food supply. There is value in hunting, they say. It keeps bears at a distance, maintains their natural (nongarbage) behavior. Bears in the wild almost never give trouble.

At the same time, both men emphasize that the future of the polar bear worldwide is far from secure, mainly because the Arctic is no longer a wilderness. Three jet flights a day stop at Churchill and some continue to such places as Eskimo Point, Coral Harbour and Resolute Bay.

A Manitoba brochure sums up the danger: "Drilling rigs have operated within a few miles of the denning site. With a railway on one side and potential oil wells on the other, the site is neither remote nor safe." Oil drilling might force females into less favorable denning areas. Oil spills could be catastrophic, both directly and to the food supply of seals. Chemicals like PCBs and mercury, borne downriver into the bay, could also shut off the food supply for seals. "And if the seals go, the bears go," the brochure concludes. "Man's hand lies upon every white bear in the Arctic, and indeed upon every living creature."



Mother and cub test new ice. Superb hunters, they'll live on seals for seven months until ice melts.

HOW COME CITY HOSPITAL HAS AN ATOMIC-SCANNING RENOSCOPE AND WE DON'T!
HOW COME MEMORIAL HOSPITAL HAS AN ISOTOPE-TRIGGERED VIRO-CALCULATOR AND WE DON'T!
Richter

Alas, hospitals are only human.

They've got to keep up with the Joneses.

For the hospital board, it must seem a simple logic of survival. Beds are filled by patients. Patients are provided by physicians. Physicians, understandably, are attracted by the latest equipment.

But for us who pay the bills, that logic costs dearly.

Unnecessary duplication of expensive technology is fueling a rampant inflation.[1] The hospital bill—and the health insurance which pays it—is now one of the fastest-rising costs in our whole economy.[2]

Can we slow it down? Ætna believes so. If doctors were to assign patients to *any* of several hospitals nearby, expensive equipment could be shared. Specialized facilities, staff, even beds would be more efficiently used.[3]

Establishing state commissions to set limits on hospital expenditures could help, too. In Maryland and Connecticut, such commissions have been at work since 1974. They've lopped some big numbers off hospital budgets,[4] without reducing the quality of care.

And Ætna is encouraging local medical societies to monitor doctors' use of hospitals. Was the length of stay appropriate? Was admission necessary in the first place?[5] If all of us involved continue to raise such questions, insurance costs *can* be controlled. Don't underestimate your own influence. Use it, as we are trying to use ours.

Ætna wants insurance to be affordable.

[1] Consider the cost of the CAT scanner, the latest thing in diagnostic machinery. (The CAT—Computerized Axial Tomograph—takes pictures of cross-sections of the body.) If every one of the 6,000 general hospitals in America bought a CAT, the initial investment alone would cost us all nearly *three billion dollars.*

[2] Ten years ago, health care costs consumed about 6% of the gross national product. Today it is close to 9%. Center stage in this inflationary drama is the hospital bill, which has doubled in the last five years!

[3] This principle could eliminate many wasteful situations. In Philadelphia, for instance, 16 hospitals have open heart surgery programs. But according to a government study, only five used them enough to be considered efficient. Waste applies to much simpler equipment, too, like beds. The government estimates there are at least 100,000 unnecessary hospital beds empty each day, at a cost of $2 billion a year.

[4] As much as $45 million saved in Maryland alone, in 1975.

[5] Most medical societies have a "Professional Standards Review Organization" created for just this kind of review for Medicare and Medicaid patients. Ætna believes the potential savings justify such review of all patients.

Ætna
LIFE & CASUALTY

Open, airy gracefulness of Schaffrath's work is fully displayed in this sweeping wall of glass in St. Mary's Church in Bad Zwischenahn. Invitingly, it welcomes shades of outside colors to interior.

By Ed Carpenter

Windows, walls: structural dialogue between equals

Schaffrath's decorative and functional art deploys light through stained glass so that the panes become designs of light

Ludwig Schaffrath's earliest childhood memory is of the enormous black mass which looms up over Alsdorf, West Germany, dominating the skyline for miles in the flat coal country west of Cologne. It is a great dark mountain of coal slag built up over the years by Alsdorf's mine, which is smack in the middle of downtown, smoky and grimy. A hundred miles of tunnels have been carved out of the darkness beneath this city whose population is completely dependent upon the ceaseless grinding away which takes place down there. Yet, just a couple of miles from the mine entrance, perhaps directly over some of those tunnels, lives and works an artist whose medium is essentially sunlight, a prodigious innovator in the one art form you would probably least expect to find flourishing in a town which has such a distinctly subterranean physical and emotional configuration.

To complicate the irony, Ludwig Schaffrath is a stained-glass artist whose favorite colors happen to be black and *dark* black, a shade in which he invariably dresses himself right down to his socks, but whose windows are primarily, well, *white*. The image of that dark mountain looming over Alsdorf during Schaffrath's childhood might evoke the politics of the 1930s—he is now 54—but is more useful here as a symbol of his uniqueness in an art which is usually associated with brilliant colors. He has made remarkable achievements in his field, not with the lavishness of his use of color but by emphasizing the one component of stained glass that is black—the differentiating lead

line. He has done this by using great quantities of white glass against which the leads stand out boldly. In so doing, he has created a style which allows the transmission of the maximum of light to the interior of a building, and the linking of window to wall through the basic units of contemporary architecture: parallel lines. Thus he has been among the first to develop ways of integrating an age-old decorative art with a style of architecture known for its antipathy toward ornamentation.

Schaffrath tells a story about how in 1952 he met Daniel-Henry Kahnweiler, the Parisian art dealer who represented Picasso, among others. Kahnweiler explained the customary arrangement between a gallery and an artist. It involved a contract covering five years, during which time the artist would receive a monthly stipend in return for exclusive rights to his work. In addition it was stipulated, or implied, that throughout the five-year period the artist was not to change his style of painting. Schaffrath found this arrangement utterly repressive, and typical of the reasons he decided to work at architectural rather than gallery art. Although he has continued to paint in the ensuing 25 years, and in fact refers to himself as a "painter who works in various media," the bulk of his production has indeed been for a wide variety of architectural commissions, in the form of stained glass and natural-stone mosaic, and it is this last medium that has more and more interested him.

Only in the last three years has he begun to come up for air, to look around, to travel and even to teach, after having been totally submerged in his work since the 1950s. "I haven't had a vacation since Markus was born," he said in 1975, at which time his son Markus was 16. Since then he has made several trips to England, and one to the United States, lecturing and teaching, and has suddenly found himself the patriarch of a growing group of young American glass artists interested in an architectural approach to glass design. The extent of his influence is indicated by the fact that an American glass magazine recently ran a cover story titled, "Is there a Schaffrathization of American Stained Glass?" accompanied by a map of North America with one of Schaffrath's designs superimposed over the United States. In any event, it is increasingly apparent that the art of stained glass is on the rise in contemporary architecture.

Until 1973, though, there were not more than a handful outside Western Europe who would have recognized the name Ludwig Schaffrath, a situation which has now been significantly altered. Since the early 1950s he had worked in relative obscurity. It is revealing, therefore, to see the extent and scale of his accomplishments. He has produced, with his typical energy, thousands of square meters of glass and mosaic, and this body of work is surely among the most striking in contemporary art; it is installed in more than

Just completed this year is a series of windows, this being one, for the Catholic hospital in Eschweiler. Looser in line than his previous work, the artist classes this with his best efforts.

The cemetery chapel in Scherpenseel and, right, the window as it appears from the inside. Done in 1972, the entire structure demonstrates clearly integration of designed window and architecture.

150 churches, schools and other public buildings.

When "modern stained glass" is mentioned, most of us think of French or English work done in the 1950s and '60s. But Léger, Braque, Manessier, Matisse, Chagall and John Piper never consistently devoted the major portion of their energy to designing stained glass and never really came to grips with the new architecture. A distinguished American glass designer, Robert Sowers, has called them "gifted interlopers," and at best their achievements are isolated bursts of brilliance, such as Matisse's chapel in Vence; which is not at all to deny that it is one of the world's most triumphantly spiritual creative accomplishments. With very few exceptions, contemporary stained glass outside Germany has reflected a strong painter's bias in concerning itself with color over line, even though the architecture of the time was linear as never before. It was the Germans, working in the anonymity of an all-out postwar reconstruction effort, who began to use the lead line to create a comprehensive and imaginative dialogue between window and wall.

When the young painter Ludwig Schaffrath arrived in Aachen in 1947 to work as the assistant to Professor Anton Wendling at the Technical University there, he was under the impression that they would be doing frescoes. But Wendling had become involved in design for stained glass and would soon have so many commissions that Schaffrath's arrival was a happy circumstance. Although Wendling never ventured far beyond the traditional glass painter's palette, he did make a major contribution in terms of form. You might say he gave contemporary stained glass what Buckminster Fuller gave the dome: both were fascinated by repetition of structural modules.

In Wendling's case, the result was not only economical at a time when cost was a growing consideration, but it was also strikingly architectural. By repeating a geometric pattern throughout the window opening and varying only the color, he produced screens of lead and glass which looked as if they had been stacked up like masonry. Wendling's teacher, Johan Thorn Prikker, had hinted at this sort of solution, but his windows were never so daringly ornamental. With these forms Wendling has stripped away any pretense of representation and established purely architectural goals for his work. One may wonder how he ever convinced his clients to accept such unsentimental designs, but then Germany was in a singularly unsentimental mood in the early 1950s. It is obvious now that the war made it possible for the wide chain of contrapuntal conditions which have permitted experimental approaches to numerous problems throughout modern Germany.

By 1953 Schaffrath had worked for seven years with Wendling on his designs and cartoons, deliberately submerging, and even frustrating, his own conceptual ideas. "I even carved many of his wood carvings—all of this while forgetting my own ambitions. Later, when I began to make my own designs on the side, which constituted my first step toward liberation, I avoided using his favorite colors and quite systematically began to do the exact opposite of what I would have done for Wendling. The results were in the beginning poor. After one has worked for an extended time with a forceful teacher, it takes great strength to find one's own style."

Schaffrath had found his own style by the late '50s,

Ed Carpenter spent several months in 1975 studying with Schaffrath on a grant from the Graham Foundation for Advanced Studies in the Fine Arts.

St. Thekla's Church, Merkstein, contains 31 Schaffrath windows of which two are shown here.

Whether for church or secular place, Schaffrath seeks regenerative feeling amidst chaos of modern life.

but only as a result of long struggle with the new architectural questions he faced. The role of the window was undergoing rapid changes in both church and secular architecture. In fact, it had recently achieved a certain freedom after, in the words of Le Corbusier, a thousand years of "fighting for the greatest possible dimensions against limitations imposed by building materials and methods of construction." German architecture had inherited the window walls of the Bauhaus architects and the architectonic legacy of the stained glass of Thorn Prikker and Wendling. A natural marriage of these influences took place in Dominikus Böhm's widely publicized Maria Königin Church in Cologne-Marienburg. Begun here was the challenge of designing entire walls of stained glass which functioned as translucent extensions of the masonry walls, rather than as apertures. Once stained glass was conceived in this way, it ceased to require thematic obligations and took on the new responsibility of expressing the language of the building in the particular vocabulary of glass.

From Schaffrath's point of view, then, the central problem of glass design became one of putting disparate architectural elements together, one, in short, of integration. The transition from wall to window had to be erased, and the forms in the glass had to relate strongly to the suddenly very important grid of supporting mullions and adjoining surfaces. The old practice of painting black fired-on details on the glass gradually fell into disuse, as emphasis was placed on the structure—just as form had found a new relationship with lead in the window. The forms in the windows were to become increments in the architectural whole, rather than mere decorations applied to holes in the architecture.

For Schaffrath, therefore, it is essential to have in hand *all* the plans for a given building, including those which do not relate specifically to the window. "I have to know a building in all its details. To me, strictly technical prints are more important than photos or sketches, because my first ideas are drawn from these technical prints. Following this, I design the window on a scale of one to ten, always beginning with the lead by working out the design in such a way that it can be 'solved' without color. Most important to me, regarding the leading, is that its holding function and graphic function are identical."

With such a distinctly architectural approach to his art, it is natural that Schaffrath should depend upon his professional relationships with architects. "As far as I am concerned, they are my most important partners. I have received almost all my commissions because they suggested me to prospective clients, and some of them I have been working with successfully for years. They plan their buildings in such a way that artwork becomes a necessary part. As a rule I don't

St. Peter and Paul Church, Schalbruch. This gable window is in actuality a whole wall of bent, flowing, coordinated glass and light, forming entire landscape of motion and color.

have full freedom, though. I try to respond to suggestions made by architects, and frequently spend as much time discussing a window with the client as I do making the design."

These discussions with clients are particularly important because stereotypes of stained glass are so deeply embedded. "People still have very old-fashioned ideas about stained glass. One of its traditional functions was the telling of Biblical stories, but today nearly everyone can read and write, so it is no longer necessary for windows to play a narrative role. The main aim of my work is to help create a meditative atmosphere. We need peaceful and quiet places, but public places, and now even museums, are transformed into fairgrounds. In cities, especially, churches may soon be the only places serving the regeneration of the *body*."

One of Schaffrath's particular successes is in St. Mary's Church in Bad Zwischenahn (pp. 82-83). The building faces a park which is lined with tall deciduous trees. When Schaffrath was commissioned to create an entire wall of glass along the park side of the church sanctuary, his design called for just two types of glass, both of which are completely colorless. Most of the window is made with a translucent bubbly glass which preserves the interior privacy of the space, but within the curling bands of the window's design a transparent glass is used. The giant window wall is thus a wonderfully receptive interpreter of the scene outside, for it transmits the background's natural changes in coloration from hour to hour and season to season. "I tried to provide the hard, boxlike architecture with a human measure and to encircle the space," says Schaffrath. "The windows enclose the room, but nature is still a part of them. By using large forms and rich details together, I wanted to create a feeling of flowing calm." Students of Schaffrath and parishioners agree he was successful.

In a new book entitled *ludwig schaffrath, stained glass and mosaic*, Konrad Pfaff describes what he calls Schaffrath's "vulnerable, tender geometry." The contradiction in these terms exemplifies the central problem in all of Schaffrath's work: how to resolve and unify the tensions between opposites. Each window deals with a process of struggle and release between elements that are organic and geometric, transparent and opaque, black and white, old and new, technological and biological. These are the struggles that energize modern civilization. When they are left unexpressed in contemporary architecture, the geometric and technological forms tend to dominate. Thus, regardless of whether he is designing for religious or secular buildings, Schaffrath defines his role in political and humanistic terms. "We have to work against our time, its congestion, its noise and its manipulative use of color in advertising. In so doing we are really

working *for* the time, trying to contribute something to help us survive."

Each window begins with sketches which are eventually formalized into a scale watercolor design. This is used for presentation to the architect and client. Next, a full-size cartoon is made on which Schaffrath designates the types of glass and the exact placement and width of each lead. He does this in his peaceful, north-lighted studio which is a wing of the house he designed for himself and his family in 1962. Occasionally he becomes so involved in a project that he scarcely emerges from his studio or communicates with his family for days on end. The completed cartoon is the score for his composition in glass. It will be interpreted and executed in one of several large workshops which specialize in fabricating the stained glass and mosaic designs of independent artists.

Nearest to Alsdorf is Oidtmann Studio, run by two brothers, Ludovikus and Fritz Oidtmann, who inherited the 150-year-old operation and all its subtleties from their father. This workshop is frequently described as the finest of its type in the world. The dean of its 30-member staff is head cutter Herr Beyss, who has been employed on the premises now for more than 50 years. During the last 20, he has been in charge of cutting the glass for nearly all of Schaffrath's windows. "He knows how I want the glass cut," says Schaffrath confidently, as Herr Beyss cuts a piece to emphasize a particularly beautiful streak of color running through it.

Later the glass will be leaded and soldered together by other craftsmen, given an inspection in the studio's huge easel window, and finally installed, all supervised at critical intervals by the artist. The efficiency of this collaboration has enabled Schaffrath to achieve enormous productivity. "In some years I have done more than in others, but there have been many in which my total has been 500 to a thousand square meters of glass." He stresses quality over quantity, however, frequently convincing clients that proposed sites for stained glass are inappropriate. Once, after working several months on cartoons for his enormous windows at St. Michael's Church in Schweinfurt, he ripped them down from his drawing wall and set them ablaze in the back yard. A completely new design followed for what was to become for many of his students and admirers one of his finest works.

Although his largest commissions have been for stained glass, Schaffrath has always relished the challenge of designing for a variety of media. Over the years his work has included tapestries, church furnishings, vestments, typefaces, books, serigraphs, sculptures, numerous weathercocks and even his own tombstone. As time goes on, though, it is the mosaic work which holds his interest most. "It allows for a quiet expression," he explains.

Late at night, on most nights, he can be found in his basement mosaic studio "talking to my stones." Many of them he has collected from the tailing of Alsdorf's black mountain. Some hold fossil-like impressions which are millions of years old. At two in the morning, on one such night, sequestered in the solitude of his basement, Ludwig Schaffrath is nearly at peace with the world. He slowly presses the ancient fragments into the wet grout of his design. Hundreds of feet below, mine workers blast and bore into the blackness.

The artist in a studio reserved for work in mosaic, an art form which interests him more and more.

Feeling of foyer window is just right for public swimming pool (with bubbles) in Übach-Palenberg.

Gerald R. Ford- on the American Presidency

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Some events demanded inclusion. Washington's farewell message. Truman's dismissal of General MacArthur. Lincoln's Gettysburg Address. Franklin Delano Roosevelt's unprecedented third term.

But other events were far more difficult to select. Was the Monroe Doctrine of 1823 more significant in determining the course of the Presidency than the Eisenhower Doctrine almost a century and a half later? Was Andrew Jackson's use of federal troops in the Chesapeake and Ohio Canal riot more significant than Harry Truman's

Jefferson signs Louisiana Purchase treaty.

Lincoln issues the Emancipation Proclamation.

seizure of the steel mills? The medallic history reflects the choices Gerald Ford made. In doing so, he used many criteria. But one was of overriding importance: "I tried to identify the events that would be most meaningful to the *American people* themselves," he explains.

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Wilson influences Paris Peace Conference.

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Thomas Jefferson, for example, is depicted signing the treaty of purchase for the Louisiana Territory, while in the background an American flag is raised over the city of New Orleans. Abraham Lincoln is shown issuing the Emancipation Proclamation, while scenes symbolizing the freeing of the slaves appear behind him. Wilson is depicted at the Palace of Versailles, where his "Fourteen Points" led to the establishment of the League of Nations. John F. Kennedy is shown ordering the blockade of Cuba, while a U.S. naval task force prepares for international confrontation on the high seas.

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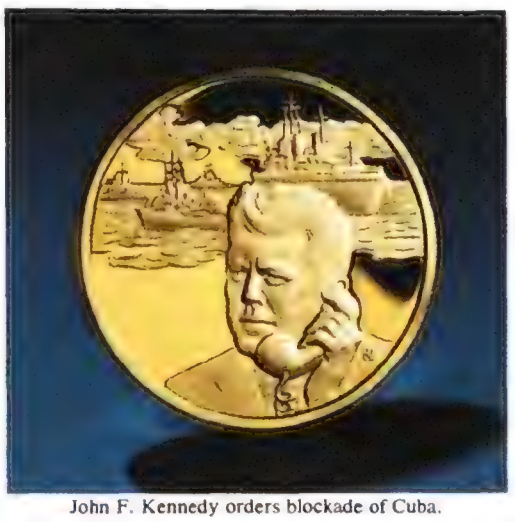
Our heritage of freedom

It was during a working session at Vail, Colorado, where plans for the program were



John F. Kennedy orders blockade of Cuba.

finalized, that Gerald R. Ford summed up his concept of this unique historical project. "Having known and worked with five Presidents, and having served as President myself, I have come to know the many facets of this office. So this history, of course, reflects my view. But in a larger sense, it belongs to the American people. And if this manner of dramatizing history results in a better understanding of our heritage of freedom, it will have been a most worthwhile project."

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By Stephen G. Michaud

He dives after cargo long asleep in ocean deep

George Bass' search of scattered wrecks from Bronze Age to American Revolution has become an archaeological discipline

Bodrum, a resort town on the southwestern coast of Turkey, lies along an eastern Mediterranean sea-lane which has been plied by merchantmen and navies for at least 5,000 years—as long, in fact, as Man has been growing crops or raising domestic animals in the region. A jumble of hotels and discos fronts a busy yacht harbor shared, in turn, by one of the largest sponge-fishing fleets in the Mediterranean.

Sponge fishing can be dreary and dangerous work. But the homely sponges are not all that the Bodrum fishermen have brought up with their nets and divers. For centuries, they have returned to port with oddments of undersea concretion, bits and pieces of glass, pottery or sculpture and an occasional jagged hunk of metal. Most common are the scores and scores of amphorae, or two-handled clay jugs, which are often found whole and put to practical use in the fishermen's homes as wine or water vessels, just as these ubiquitous jugs have been employed around the Mediterranean since prehistory.

The sheer volume of this haphazard recovery of artifacts long ago convinced historians and archaeologists that the waters off Bodrum concealed a trove of wrecked vessels from the past 5,000 years, ships of all sizes and origins swamped or dashed on the rocks by the sudden, vicious *meltem* winds of summer.

Yet despite the evidence and reports from scuba divers which confirmed the presence of literally hundreds of cargoes strewn across the sea floor, archaeologists had not been able to tap them in this subsea environment.

Wooden angel from a 17th-century Portuguese shipwreck is carefully raised by a scuba-diving

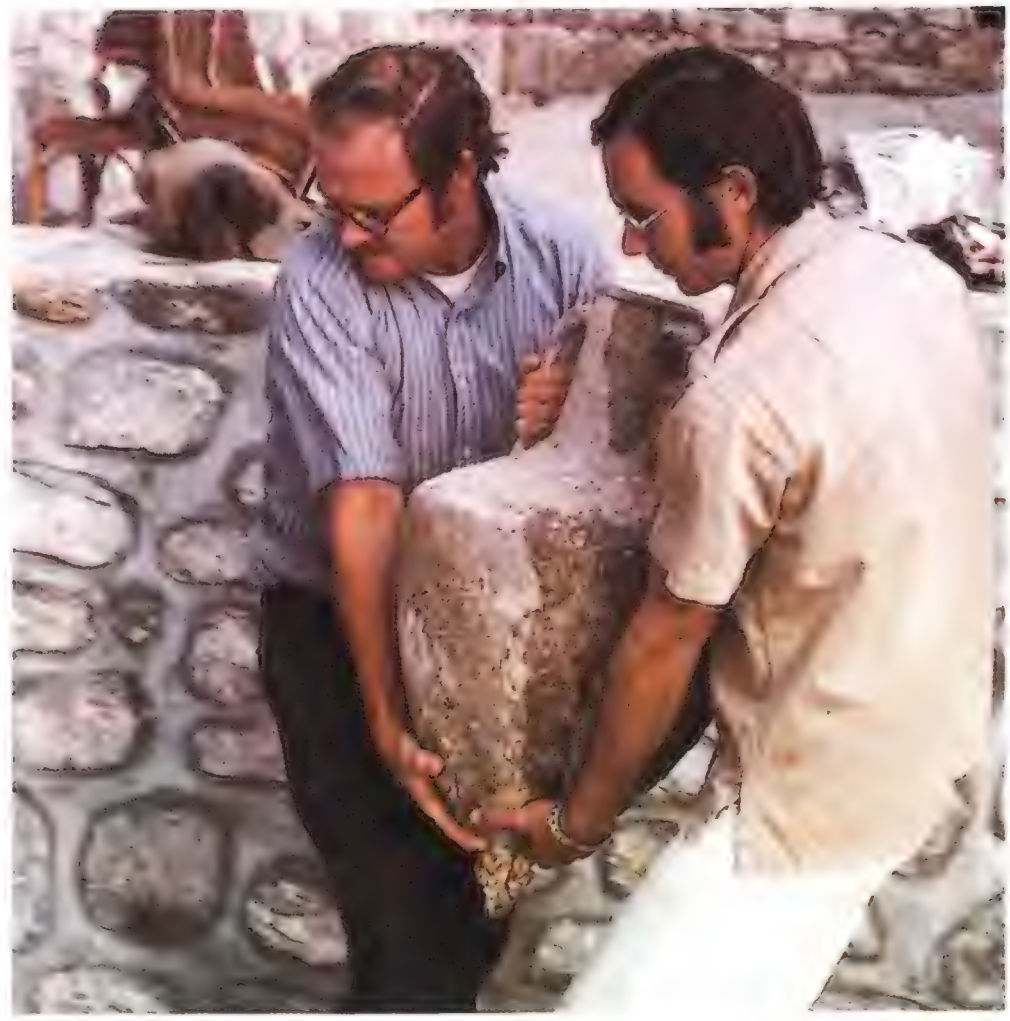
Enter Peter Throckmorton, itinerant American writer, photographer and expert diver who, in the late 1950s, set out to explore this vast undersea graveyard. With the aid of a friend, a local sponge fisherman, Throckmorton located dozens of wrecks along the Turkish coast and reasoned from the artifacts he recovered that at least some of them dated back to the Late Bronze Age.

archaeologist from its resting place, 40 to 60 feet deep, in the waters off Mombasa, Kenya.

One wreck in particular piqued Throckmorton's interest. It lay in 100 feet of water off Cape Gelidonya, a desolate headland 150 miles down the coast from Bodrum. Tools and copper ingots that he retrieved from the site—plus a few pottery shards—were persuasive evidence that this was a craft from the time of Homer's heroes, the oldest shipwreck ever found.

It was a 3,200-year-old time capsule, waiting to reveal its secrets, but Turkish salvors, who knew the wreck contained copper and bronze, were making ready to dynamite it into usable bits.

With six months left before the Cape Gelidonya wreck would be lost to history, Throckmorton went to New York in December 1959 for the annual meeting of the Archaeological Institute of America. There he was introduced to a 27-year-old graduate student named



George Bass (left) and a geologist on his expedition transport a Hellenistic amphora.

George F. Bass who had only recently returned from a two-year Army hitch in Korea. Bass, who had taken his master's degree at Johns Hopkins, was now studying for his doctorate in classical archaeology under the famed Rodney Young at the University Museum of the University of Pennsylvania.

At a protracted conference with Young, Bass and others, Throckmorton made his case for excavating the ship and backed his claims with photographs of artifacts the archaeologists found irresistible. Young, the excavator of the ancient city of Gordion in Anatolian Turkey, made up his mind: the wreck would be excavated, and George Bass would do it. First, however, Bass must learn to dive.

"I jumped at Young's offer," Bass now recalls. "I was too innocent to know what the problems might be."

In 1960, Throckmorton set about putting together a diving team while the University Museum's director, Froelich Rainey, went in search of funds to finance the expedition. Bass enrolled in a YMCA scuba course, managing to cram ten weeks' practice into six, and then popped down to his native South Carolina to marry the music student he had met the previous summer. They left for Turkey two days later.

The new Mrs. Bass, whose previous travels had taken her as far from home as Rochester, New York, would spend her honeymoon swatting flies and cataloguing artifacts under a brutal Turkish sun at a place she was hard put to pronounce. She would also be on hand to watch her new husband establish a new archaeological discipline.

A camp was established on shore near the only springs available. The little group of tents hugged the base of a sheer cliff where light-gray stone collected and focused the sun's rays down upon exposed shelters. The team of eight dived from a rented sponge boat. They planned to spend a few weeks at Cape Gelidonya, then move on to a Byzantine-era site by midsummer. Only when the expedition had completed its preliminary dives did Bass realize the complexity of his task.

Whatever it was, a hundred feet down, it was larger than they had expected. Great hunks of copper and bronze lay welded together at the bottom. The sand shifted and whirled, time and again obscuring the site. The outline of the vessel could only be inferred from neat little bundles of tools or pots.

As an archaeologist, Bass was schooled in patience and the value of the scientific approach. So, in the absence of footsteps to follow, nautical archaeology was launched along the same general principles as dryland excavation. But instead of brushing sand away from their finds, these scientists sucked relics to the surface with a compressed-air suction pipe jerry-built at the site. Sand and debris came up through the pipe and an improvised basket caught larger objects.

Expedition members mapped and drew the wreck on plastic tablets carried below. A variety of "aerial" mapping was undertaken by a diver with a camera who swam slowly over the wreck, marking his position with

Long a science writer, Stephen G. Michaud has a special interest in all archaeology, but doesn't swim. He is Research Editor of Business Week *magazine.*

This 65-foot trawler, lying off the Turkish coast, carried Bass and team to the sites of 17 wrecks.

a plumb line. The subsea equivalent of a hoist for heavy objects was a balloon (p. 99).

Bass and his team completely excavated the site and brought back with them detailed drawings and photographs of the ancient wreck (the artifacts stayed in Turkey at the Bodrum Museum of Marine Antiquities, established by Throckmorton). Then followed seven years of research through archives and records. Bass was able to establish the vessel's likely provenance (Canaanite), its purpose (trade in copper and bronze which the captain smelted en route) and ports of call. The findings became Bass' doctoral thesis.

Only after his return to classes in Philadelphia that autumn did Bass begin to realize the promise of underwater archaeology. "I was a pre-Classical archaeologist," he recalls. "My specialty was the Bronze Age. I didn't really care about Byzantine or Roman excavations. Only another Bronze Age site of comparable importance would have interested me."

But other expedition members were enthusiastic about the dig itself and their zeal was infectious. Too, they had demonstrated that underwater archaeology was feasible, and did not require professional divers. Most important, Bass' research into the Gelidonya wreck revealed what an amazing mass of information lay beneath the sea.

Underwater archaeologist marks the remains of a hull found off Yassi Ada, Turkey.

This plan of ancient hull's remains was first ever made with Bass' stereo-mapping techniques.

Archaeological mapping frames, built underwater, mark off the jumbled amphorae at Yassi Ada.

Moment of discovery! Diver finds Bronze Age cargo at Şeytan Deresi, Turkey. Ship sank about 1600 B.C.

Objects from 17th-century Portuguese wreck include cannon, clyster pump, decorated vases.

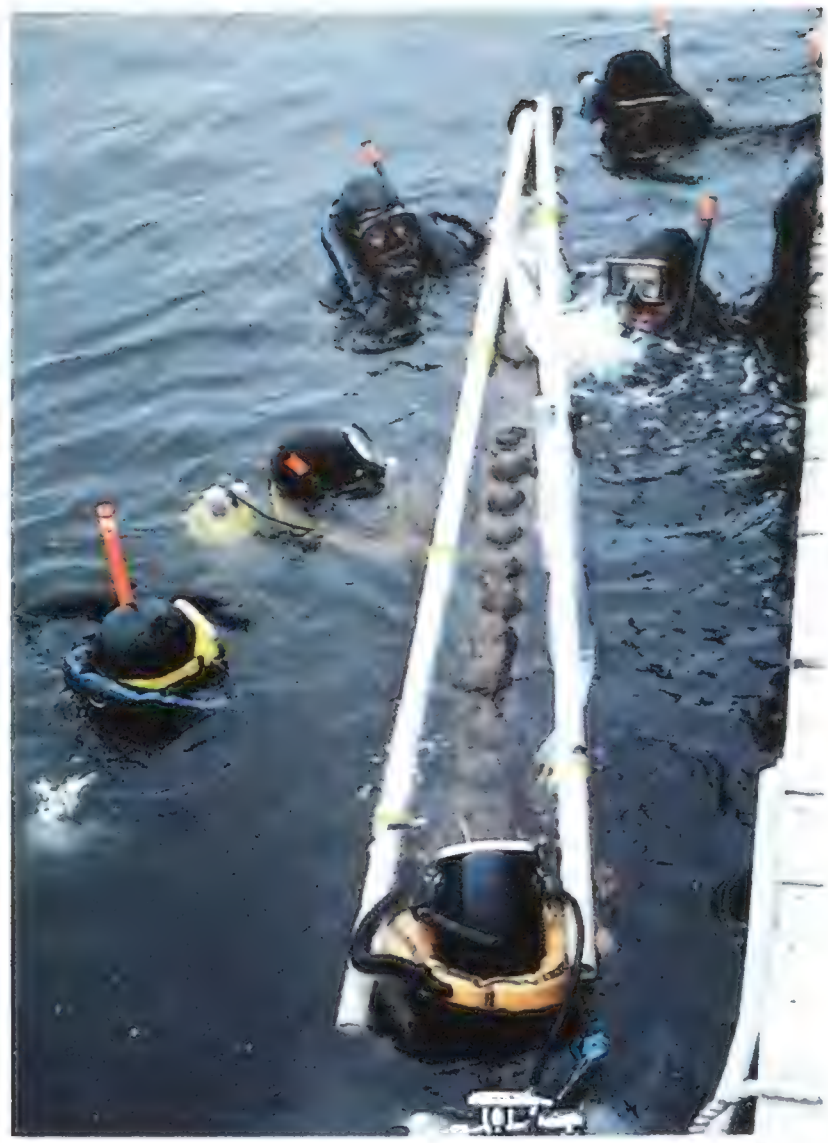
"For one thing," he says, "it became apparent that most of our Classical bronzes were going to come from the sea. The ships themselves would be a very valid field of research. Think of their cargoes! Anything that anyone ever made, I think, has been carried at one time or another on a ship. These things are very well preserved and extremely well dated. The main reason, frankly, is that they have been kept out of the hands of Man. Man, in the past, has liked to melt down metal statues, burn marble statues for lime, melt down gold coins for earrings, chop up ships for firewood."

Museum director Rainey heartily endorsed Bass' proposal to return to Turkey and saw to it that the group of young archaeologists Bass would take with him were trained to dive. The new site, which Throckmorton had also discovered earlier, lay 130 feet down, on a slope, under a rock ledge which had torn out the bottoms of at least a dozen ships over the centuries. The nearest land was a miserable rock called Yassi Ada (Turkish for flat island) which had no fresh water, only minimal vegetation in the form of thistles and a burgeoning population of ravenous rats. How the rodents survived on a skimpy fare of gulls' eggs and hatchlings never was established. How they got there in the first place was more simply explained: they were shipwrecked. Yassi Ada became the expedition's camp and, as Bass remembers, the group lived in "relatively rodent-free" shelters during the dig.

Now Bass had two local fishing boats to work from, and a diving barge. Throughout the 1960s, the excavation of the Byzantine wreck and a nearby Roman site grew progressively more sophisticated. Not only were the archaeologists now familiar with the hazards and problems of their special work, but the team developed a wide variety of technological aids.

Mapping was refined by the addition of a metal grid placed over the wreck, which enabled the team to divide the site into coded quadrants. Bass helped perfect a technique for stereo-photogrammetric underwater graphs of the wreck. (The U.S. Navy and others would also use this system for subsea work.) An underwater telephone booth was installed (p. 98), as was a submerged decompression chamber which greatly increased the amount of time the divers could spend on the site. Side-scanning sonar was used for the first time to ferret out ancient hulks and artifacts obscured by

Excavation is carried out by Institute of Nautical Archaeology along with National Museums of Kenya.



Summer students surface with cannonball rack from Revolutionary privateer sunk in Maine.

the sand. Bass even employed a specially-designed two-man submarine, the *Asherah,* fitted with a television camera and photo-mapping equipment.

Bass was able to deduce when the Byzantine ship sank from the 70-odd gold and copper coins discovered in the wreck. Their dates stopped abruptly at A.D. 625, indicating the probability that she went down that year. From that bench mark, the mass of pottery on board was easily dated, and several distinct types of lamps and other objects were, for the first time, known to have been fashioned in the early seventh century.

With his expanded team and the aid of experts in a range of disciplines from ship modeling to post-Classical Greek civilization, Bass once against reconstructed the last voyage of an ancient vessel, this time with exacting detail. "It is the most information ever gotten out of an ancient wreck," he says. "We know how much money they had and what its spending power was. We know where the ship was coming from, how much it cost and how it was constructed."

Publication of the earlier Cape Gelidonya findings in 1967 confirmed nautical archaeology's legitimacy among Bass' colleagues. Nautical archaeology expanded beyond Turkey that year, too. A member of Bass' team, graduate student Michael L. Katzev, departed for Cyprus, where he conducted the excavation of the only Classical Greek ship—a late fourth century B.C. merchant vessel—ever found. With his wife, Susan Womer, also a graduate student who had studied with Bass, Katzev not only excavated the site off the town of Kyrenia, but also brought the nearly intact hull to the surface. A special museum in Kyrenia now exhibits it.

Elsewhere, other archaeologists followed Bass' lead and sought out his and his team's help with their digs. Yet, as nautical archaeology arrived, its founder began having grave misgivings. One of Bass' closest colleagues and friends had been stricken with an embolism and nearly lost his life at Yassi Ada in 1969; Bass had also seen a Turkish sponge diver die in the expedition's recompression chamber, where he was undergoing treatment for decompression sickness, or the bends. Bass took a sabbatical at Cambridge, England, and spent a summer on a land dig in Italy. He did not dive from 1969 to 1973.

The hiatus was painful. And so, in 1973, with the

aid and encouragement of his wife Ann, who takes nautical archaeology as seriously as he does, Bass founded the American Institute of Nautical Archaeology (now the Institute of Nautical Archaeology). Some 18 colleges and universities, plus a smattering of foundations, corporations and private donors, contributed sufficient funds to establish the present $70,000 annual operating budget. Of the two dozen or so archaeologists in the world who are sufficiently competent to undertake an underwater dig, fully half are INA staff members.

Donald A. Frey and Robin C. M. Piercy have been conducting the excavation of a 17th-century Portuguese warship off ancient Fort Jesus in Mombasa, Kenya, for the past two years (pp. 96-97). Michael Katzev also joined INA and has begun preliminary work on a third-century B.C. Greek vessel lying off the coast of Lipari, Italy. At 200 to 300 feet, it is the deepest ancient wreck yet surveyed.

INA has also begun a series of summer schools for prospective nautical archaeologists. Two have been held in Turkey; another, in 1976, at Yorktown, Virginia, where the INA team dived on what they believe to have been one of Lord Cornwallis' transports, scuttled (most likely) in the last engagement of the Revolutionary War. A combination dig and summer school project is continuing near the mouth of the Penobscot River in Maine. There, in 1779, the largest fleet of warships assembled by the American side during the Revolution was ignominously routed by just a few British ships.

Recently Bass told a Cleveland audience how, in Turkey last summer, he and his team found a priceless cargo of Islamic glass dating from around A.D. 1000. The wreck may very well be the earliest example yet found of a ship built in the modern manner.

Miles alone can't measure the distance from Bodrum to the banks of the Brazos. But there in the flatlands of east central Texas is the new home of the Institute of Nautical Archaeology. The institute is now affiliated with Texas A&M University in College Station, and occupies a long, low building of its own adjacent to an abandoned airport a dozen miles from the A&M campus. A&M now offers the only graduate-level degree in the United States that carries a specialization in nautical archaeology.

Bass, at 45, is adjusting to the role of preeminent scholar-explorer of nautical archaeology. But he has yet to bank his fires. "I'm staying in nautical archaeology," he says, "because I think it's going to turn up some tremendously exciting historical results. I'm really past the point where I get excited about diving itself. I'm really bored with jumping in a wet suit and diving into cold water. I don't enjoy the headaches. But I guess my dream as a prehistorian is to find a Neolithic ship, an Early Bronze Age ship, a Minoan ship. I know they will be found, maybe not in my lifetime, but they're certainly there."

INA devices include air-filled "phone booth" (above). Balloon (right) hoists mass of ingots from 1200 B.C.

By John Dornberg

The long search for the millions uprooted by war

Aided by computers and 36 million cards, West German Red Cross Tracing Service unites refugees with kin and with their own past

"I am called Gerd Kleinhammer, though that is not my real name. It was given me by the juvenile court. On April 29, 1945, I was found, wounded by shrapnel in the right leg and right arm, lying next to a dead woman on the outskirts of Königswusterhausen near Berlin. I was about two. The woman is believed to have been my mother, but she had no identification on her person.

"The soldier who found me took me to a hospital, and in July 1945 I was taken in by my foster parents. Although more than 32 years have passed, do you think there is any chance of establishing my true identity and of locating my real parents or other relatives if they are still alive?"

That letter is one of thousands on file in a gray stone building in Munich, headquarters of the West German Red Cross Tracing Service. The letters are from young adults searching for their origins and ties to long-lost families. Three decades ago they were the infants or bewildered little children in knee pants or pigtails who had been washed ashore as human debris in the convulsion of war. With no papers and no last names, and often too young to know their given names, they were among the flotsam and jetsam of the battlefields—the myriad lost waifs of Nazi Germany's capitulation in World War II.

For many people the war is either a dim memory or already history. But for the 120 dedicated men and women of the tracing service it remains the solemn reality of their daily lives.

Their task is aided by computers, 900,000 photographs that fill 199 thick volumes, by a library of battle maps and military books, and by two floors of archives containing 36 million cross-referenced index cards. The job is to track down the fate of 500,000 Wehrmacht soldiers still listed as missing in action; to search for 150,000 German civilians still not accounted for; to locate 3,000 children believed alive but missing since the mid-1940s, and to assist more than 3,000 young people—such as Gerd Kleinhammer—in locating relatives and establishing their real identities.

The search for missing humanity has continued for more than 30 years—since the shooting stopped in Europe—a job, says Dr. Max Heinrich, director of the center, "that is certain to turn you into a pacifist."

The raw statistics are staggering. When the war ended, 16 million Germans were homeless, had fled, or had been dispossessed from their erstwhile territories in what are now Poland and Czechoslovakia; 7 million had been killed; 11 million were prisoners of war; 2 million were listed as missing in action; 800,000 civilians were estimated to have been captured and pressed into forced labor, primarily in the Soviet Union.

Liesbeth Otto in 1940. Later her family fled the war, her mother died and the child was "lost."

John Dornberg is a veteran American foreign correspondent who has headquarters in Munich.

Liesbeth in tearful TV interview, after tracing service reunited her with father and brother. She grew up in Krasnoyarsk as Maria Albertowna Logwinenko, spoke only Russian, has had to relearn German.

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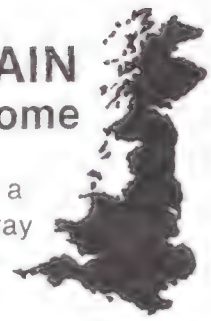

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Director of West German tracing service, Dr. Max Heinrich, is shown amid files at his office in Munich. They include 307,000 Muellers and 13,000 are Hans.

Nearly 300,000 parents and children had been separated by battle or on the long treks from the East. Every fourth person of German ethnic origin was looking for a lost relative.

To help them in their search, the Red Cross established the tracing service in an abandoned bakery in Flensburg, near the Danish border. Two years later, in 1947, the center was moved to the defunct 19th-century infantry garrison where it still is. Since then it has located or answered lingering doubts about more than 1.2 million soldiers listed as missing in action; closed the books on 208,000 missing civilians; and reunited 284,000 parents and children.

The work, subsidized by the West German government at around $1 million annually and aided by volunteer contributions of money, time and dedication to the Red Cross, has been both heartwarming and heartrending.

"Heartwarming," says Dr. Heinrich, "when after years of searching and hoping we can reunite parents and children or can report that a man listed as missing in action is alive and well somewhere. Heartrending when we must conclude that further search is useless and that all evidence indicates that the person is probably dead.

"The most tragic case I know is a mother whose son was twice erroneously reported killed in action during the war. After each notification he showed up at home on leave. But, toward the end of the war, he was listed as missing and never returned. She is unshakable in her belief that he is still alive and convinced that if the Wehrmacht made the same mistake twice, the Red Cross must be making it a third time."

Mistakes are rare. However, there is one case of a West German farmer who, after almost three decades of believing that his missing brother might be alive, finally gave up hope three years ago and had his name added to the tablet on a village war memorial. A traveling salesman happened to see the inscription and reported that the "dead" brother was not only one of his own customers but living in a town less than 60 miles away.

"We are not infallible," says Wolfgang Kreisig, a veteran of 30 years' service with the center, "but almost. I call this humanity's biggest single detective effort and the world's largest manhunt. It has entailed sifting through mountains of records, reading countless battle reports and memoirs by old soldiers and generals to find clues to what happened to specific units. It has meant interviewing literally millions of potential witnesses, including every repatriated German POW

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The system's alarm is so loud that it can cause pain–loud enough to drive an intruder out of your home before anything is stolen or destroyed and loud enough to alert neighbors to call the police.

The powerful optional blast horns can also be placed outside your home or office to warn your neighbors.

Unlike the complex and expensive commercial alarms that require sensors wired into every door or window, the Midex requires no sensors nor any other additional equipment other than your stereo speakers or an optional pair of blast horns. Its beam actually penetrates walls to set up an electronic barrier against intrusion.

NO MORE FALSE ALARMS

The Midex is not triggered by noise, sound, temperature or humidity–just motion–and since a computer interprets the nature of the motion, the chances of a false alarm are very remote.

An experienced burglar can disarm an expensive security system or break into a home or office through a wall. Using a Midex system there is no way a burglar can penetrate the protection beam without triggering the loud alarm. Even if the burglar cuts off your power, the four-hour rechargeable battery pack will keep your unit triggered, ready to sense motion and sound an alarm.

DEFENSE AGAINST PEEPING TOMS

By pointing your unit towards the outdoors from your bedroom and installing an outside speaker, light, or alarm, your unit can sense a peeping Tom and frighten him off. Pets are no problem for the Midex. Simply put them in one section of the house and concentrate the beam in another.

When the Midex senses an intruder, it remains silent for 20 seconds. It then sounds the alarm until the burglar leaves. One minute after the burglar leaves, the alarm shuts off and resets, once again ready to do its job. This shut-off feature, not found on many expensive systems, means that your alarm won't go wailing all night long while you're away. When your neighbors hear it, they'll know positively that there's trouble.

PROFESSIONAL SYSTEM

Midex is portable so it can be placed anywhere in your home. You simply connect it to your stereo speakers or attach the two optional blast horns.

Operating the Midex is as easy as its installation. To arm the unit, you remove a specially coded key. You now have 30 seconds to leave your premises. When you return, you enter and insert your key to disarm the unit. You have 20 seconds to do that. Each key is registered with Midex, and that number is kept in their vault should you ever need a duplicate. Three keys are supplied with each unit.

As an extra security measure, you can leave your unit on at night and place an optional panic button by your bed. But with all its optional features, the Midex system is complete, designed to protect you, your home and property just as it arrives in its wellprotected carton.

The Midex 55 system is the latest electronic breakthrough by Solfan Systems, Inc.–a company that specializes in sophisticated professional security systems for banks and high security areas. JS&A first became acquainted with Midex after we were burglarized. At the time we owned an excellent security system, but the burglars went through a wall that could not have been protected by sensors. We then installed over $5,000 worth of the Midex commercial equipment in our warehouse. When Solfan Systems announced their intentions to market their units to consumers, we immediately offered our services.

COMPARED AGAINST OTHERS

In a recent issue of a leading consumer publication, there was a complete article written on the tests given security devices which were purchased in New York. The Midex 55 is not available in New York stores, but had it been compared, it would have been rated tops in space protection and protection against false alarms–two of the top criteria used to evaluate these systems. Don't be confused. There is no system under $1,000 that provides you with the same protection.

YOU JUDGE THE QUALITY

Will the Midex system ever fail? No product is perfect, but judge for yourself. All components used in the Midex system are of aerospace quality and of such high reliability that they pass the military standard 883 for thermal shock and burn-in. In short, they go through the same rugged tests and controls used on components in manned spaceships.

Each component is first tested at extreme tolerances and then retested after assembly. The entire system is then put under full electrical loads at 150 degrees Fahrenheit for an entire week. If there is a defect, these tests will cause it to surface.

PEOPLE LIKE THE SYSTEM

Wally Schirra, a scientist and former astronaut, says this about the Midex 55. "I know of no system that is as easy to use and provides such solid protection to the homeowner as the Midex. I would strongly recommend it to anyone. I am more than pleased with my unit."

Many more people can attest to the quality of this system, but the true test is how it performs in your home or office. That is why we provide a one month trial period. We give you the opportunity to see how fail-safe and easy to operate the Midex system is and how thoroughly it protects you and your loved ones.

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as well as every refugee, émigré, expellee or resettler from Eastern Europe and the Soviet Union.

"There are 21 million names on the cards in these boxes," said Kreisig, leading me past row on row of shelves and cabinets in the main archive. "We have a card on every person being sought, every person who has ever made a tracing request, everyone connected with each case and everyone who has ever been interviewed or questioned. There are 307,000 cards with the name of Mueller, and of those 13,000 have the first name of Hans."

Much of the information has come from the Red Cross of the Soviet Union and other East European countries. As Dr. Heinrich says: "There is only one Red Cross and it knows no boundaries."

Since 1957, when the Soviet and West German Red Cross committees signed an agreement for mutual assistance, the Munich center has sent 330,000 inquiries on missing soldiers and civilians to Moscow and has received 319,000 replies. Of those answers nearly one-fourth were "positive," meaning either that the persons had been located, or, as is most often the case, that their deaths were established beyond question. To do that, Soviet Red Cross officials comb through their own lists of wartime prisoners and explore the countryside for graves.

Reciprocity is the rule, not the exception, in this effort, and during the same period the Munich center received 41,000 inquiries from the Soviet Red Cross—from Soviet citizens hunting relatives who had been deported to Nazi Germany as slave laborers, taken prisoner of war, or listed as missing in action.

Now that West Germany has signed treaties with the Soviet Union and Poland permitting tens of thousands of ethnic Germans to emigrate from both countries, the search is getting bigger.

Détente eases restrictions

The new impetus is a result of East-West détente and the Bonn government's *Ostpolitik*. Not only have relations with the countries of Eastern Europe and the Soviet Union improved since 1970—when Bonn broke the postwar ice, recognized Poland's Oder-Neisse frontier, established quasidiplomatic relations with East Germany, and signed nonaggression pacts with Warsaw, Moscow and Prague

Heinz Jahnscheck shows then-and-now pictures of nephew, found in Poland.

—but Soviet-bloc governments have also somewhat eased restrictions on human freedom and movement. More than 31,000 ethnic Germans in the USSR have been allowed to emigrate since 1971. Poland has agreed to facilitate the possible emigration of more than 120,000 Germans from its territory. Each poses a potential new piece in the huge jigsaw puzzle of missing humanity.

But even those who elect to remain where they are now feel less inhibited about contacting friends, relatives and agencies such as the Red Cross in the West. For many years after the war, for example, inquiries from children looking for their parents and trying to determine their backgrounds came almost exclusively from West Germany itself. Since 1970 there has been a pronounced increase in appeals from young people in Poland, the Soviet Union, East Germany and other Communist countries.

Says Friedl Gobmeier, chief of the Munich center's children's department, "In many cases, for many years, they

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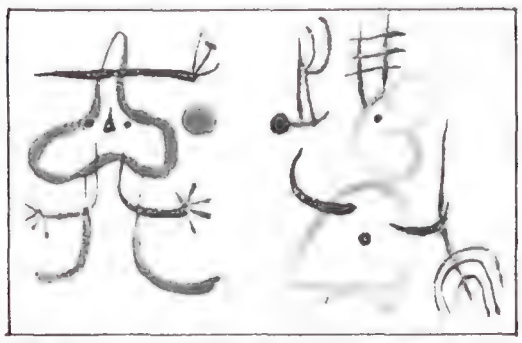

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Original prints, whatever the process used to create them, are "hand-pulled" under the artist's supervision, or by the artist himself. This means that any work produced photographically or by another purely mechanical process is not an *original* print.

G. Clark Sealy's original etching, *Lotus Pond* Signed limited edition of 125

If you examine a print under a magnifying glass and discover a regular pattern of small dots, you will know immediately that it is not an original work.

If the print is a serigraph (produced by a silkscreen process), the ink will seem rather like paint and appear to be sitting upon (rather than absorbed into) the paper.

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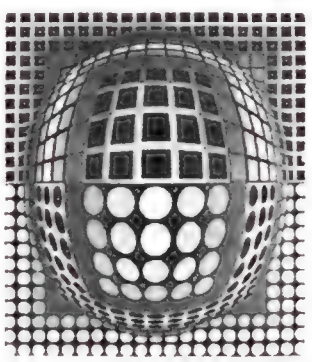

Victor Vasarely's original serigraph, *Bika*. Signed limited edition of 125

Original prints are always produced in limited editions, at the most several hundred copies. If thousands of copies are available, then the work is almost certainly *not* original. (In most cases, to assure that the integrity of their work is not violated, artists will destroy the plate after the edition has been produced.)

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Bernard Charoy's original lithograph, *Paysage Bleu*. Signed limited edition of 175

The print will have a figure on its border, indicating the number of prints pulled and the number of the individual print in the sequence.

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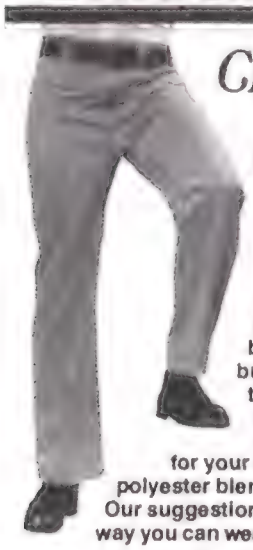

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Unidentified child among the many "lost" at Friedland Camp, 1945.

simply did not know that they were foster or adopted children and foundlings. Sometimes fear of the truth and, in Eastern Europe, fear of recrimination kept them from making inquiries. Often it is the need to establish identity—for marriage, when they become parents themselves, or for inheritance purposes—that now induces them to embark on their quests. Occasionally it is sheer curiosity."

Though more than 1,600 hard-core cases remain to be solved, hundreds of these nameless people have been reunited with parents or other living relatives since the search began. Often they no longer speak the same language.

Such is the case with Albert Otto and daughter Liesbeth (p. 101)—reunited after 31 years. Otto was living in Wehlau, East Prussia, when he was drafted into the Wehrmacht. The last time he saw his wife Martha and their three children, Christel, Manfred and Liesbeth, was when he came home on furlough for Christmas 1944. He returned to the Western Front, where he was soon taken prisoner by the British. Back home, meanwhile, the Russians were advancing and Frau Otto fled with the children to Danzig, now Gdansk. The 200-mile odyssey, mostly on foot and in subzero temperatures, was too much. She died of pneumonia. The children, left to fend for

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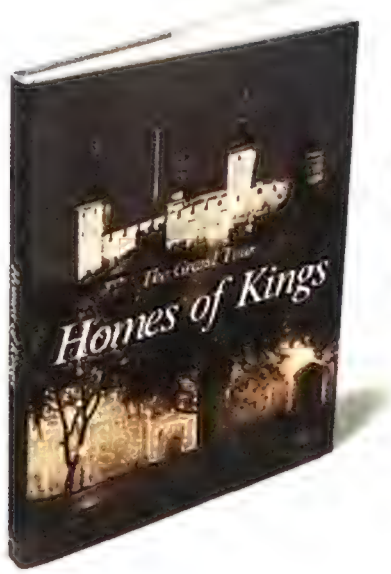

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themselves, decided to return home to Wehlau. Manfred and Christel, both teenagers, were put on a farm by the Soviet authorities. Christel died of malnutrition.

Liesbeth, the youngest—she was eight years old—was befriended by a woman living nearby who, for reasons never explained, attempted to flee to Lithuania with her. They were separated along the way and Liesbeth disappeared. Manfred managed to get to West Germany where he found his father, just out of a POW camp. They settled in Schleswig and began a 31-year search for Liesbeth.

"It was," says Frau Gobmeier, "one of our toughest and seemingly most hopeless cases. I can't begin to count how often we published the girl's picture or broadcast her description—to no avail."

Then, in the spring of 1976, Frau Gobmeier logged in a letter, in Russian, that had come from the Soviet Red Cross. It was from a trolleybus conductor living in Krasnoyarsk, Siberia. Her name: Maria Albertowna Logwinenko.

Seeking their lost relatives, German women display lists and pictures

Miracles still do happen

"I am turning to you," she wrote, "because occasionally miracles still do happen. Please, please help me find myself and my family. All I know is that I was born in a town called Wellau or Wehlau, that I had a brother and sister named Manfred and Christel, and that my mother died in Danzig. There was also a woman living nearby who tried to take me away from the war to Lithuania, but we lost each other along the way. When I was a little girl and playing in the sand, I would sometimes write a name with a stick: 'Otto.' Maybe it has something to do with my family."

It did not take Frau Gobmeier and her researchers long to correlate the information with that on file, leaving no doubt that Maria Albertowna Logwinenko from Krasnoyarsk was the Liesbeth Otto for whom her father Albert and brother Manfred had been searching since 1945. They spoke no Russian and she not a word of German.

But a reunion like that can often be a traumatic, emotional experience that transcends mere linguistic differences. Before arriving in West Germany in late 1976, Liesbeth Otto wrote once more in Russian with a mixture of joy and trepidation: "Thirty-one years. That is such a long time and so much has happened. What will we say to each other? Will we ever know each other?"

Sometimes, though decades have elapsed, the search—thanks to the Munich center's computer—is a matter of mere seconds. Hannelore Schilling (her married name) from East Germany is a perfect example.

"I believe my real name is Hannelore Pottina," she wrote Frau Gobmeier in the fall of 1976. "It could also be Pottnat or Potinsk. I was born in 1940 or 1941 in Königsberg, East Prussia [now Kaliningrad and part of the USSR]. There was an older boy in our family with a big electric train as well as a woman called Aunt Martha. My father frequently brought home baking chocolate, so it is possible that he worked in a chocolate or candy factory. The mothers of my parents were called 'Big' and 'Little' Grandma. I have a vague recollection that we lived above a store. When my foster parents took me out of an orphanage, so I have been told, I said to them that my mother had freckles and fat legs."

The sparse information in her letter was fed into the computer. It reported negative to the three names she had given—Pottina, Pottnat or Potinsk. But the data bank did have 74 missing girls with the first names of Hannelore, 683 missing children born in Königsberg, and 851 born in the years 1940 or 1941.

to Nazi solders who were returning to hometowns after World War II.

Various combinations were made and the computer came up with two girls called Hannelore, both born in Königsberg in 1941. One was Hannelore Putenat.

From the central archive a researcher drew the Putenat file—an inquiry, on record since 1960, from a man living in West Germany named Friedrich Putenat. He was looking for his brother's wife, Gertrud, and his niece, Hannelore, both of whom had been missing since a refugee trek out of East Prussia in 1945. His brother had been killed in action in 1943. Among the identifying information he had provided was the fact that his own mother and sister-in-law's mother, both living with the family, used to be called "Big" and "Little" Grandma.

Hannelore Putenat's search for her family, and her family's quest for her, though conducted over a period of three decades, took only 120 seconds to complete on the Munich computer. She is now in regular contact with her uncle, Friedrich, and all other surviving relatives in East and West Germany. The quest for her mother continues.

Sometimes the search requires indomitable patience, a liberal dose of imagination and ingenuity, and a puzzle addict's kind of dedication and plain luck.

Luck is changing the life of Jerzy Janczak, whose real name is Juergen Jahnscheck. Today he lives in Olsztyn,

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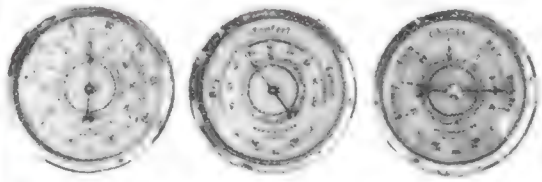

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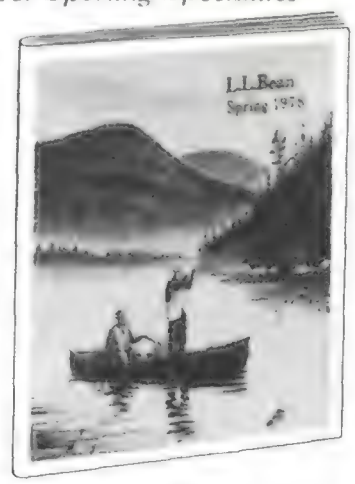

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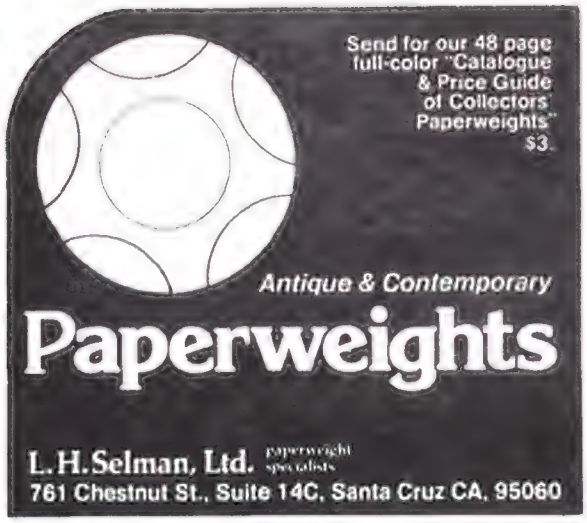
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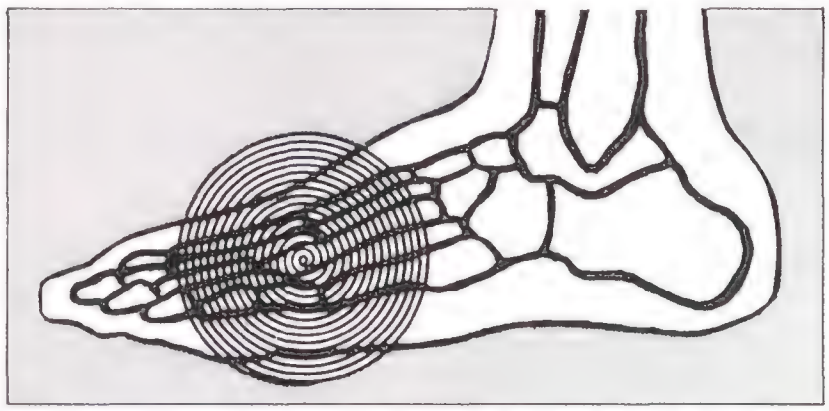
My Feet Were Killing Me...Until I Discovered the Miracle of Hamburg!



It was the European trip I had always dreamed about. I had the time and money to go where I wanted—see what I wanted. But I soon learned that money and time don't mean much when your feet hurt too much to walk. After a few days of sightseeing my feet were killing me.

Oh, I tried to keep going. In Paris I limped through Notre Dame and along the Champs-Elysées. And I went up in the Eiffel Tower although I can't honestly say I remember the view. My feet were so tired and sore my whole body ached. While everbody else was having a great time, I was in my hotel room. I didn't even feel like sitting in a sidewalk cafe.

The whole trip was like that until I got to Hamburg, Germany. There, by accident, I happened to hear about an *exciting breakthrough for anyone who suffers from sore, aching feet and legs.*

This wonderful invention was a custom-made foot support called Flexible Featherspring. When I got a pair and slipped them into my shoes *my pain disappeared almost instantly.* The flexible shock absorbing support they gave my feet was like cradling them on a cushion of air. I could walk, stand even run. The relief was truly a miracle.

And just one pair was all I needed. I learned that women also can wear them—even with sandals and open backed shoes. They're completely invisible.

Imagine how dumbfounded I was to discover that these miraculous devices were sold only in Europe. Right then I determined that I would share the miracle I discovered in Hamburg with my own countrymen.

Today thousands of Americans including those who have retired—many with foot problems far more severe than mine—have experienced this blessed relief for themselves.

Here's why Featherspring work for them and *why they can work for you.* These supports are like nothing you've ever seen before. They are custom fitted and made for *your feet alone!* Unlike conventional devices, they actually imitate the youthful elastic support that Nature originally intended your feet to have.

Whatever your problem—corns, calluses, pain in the balls of your feet, burning nerve ends, painful ankles, old injuries, backaches or just generally sore, aching feet, Flexible Featherspring will bring you guaranteed relief with every step you take.

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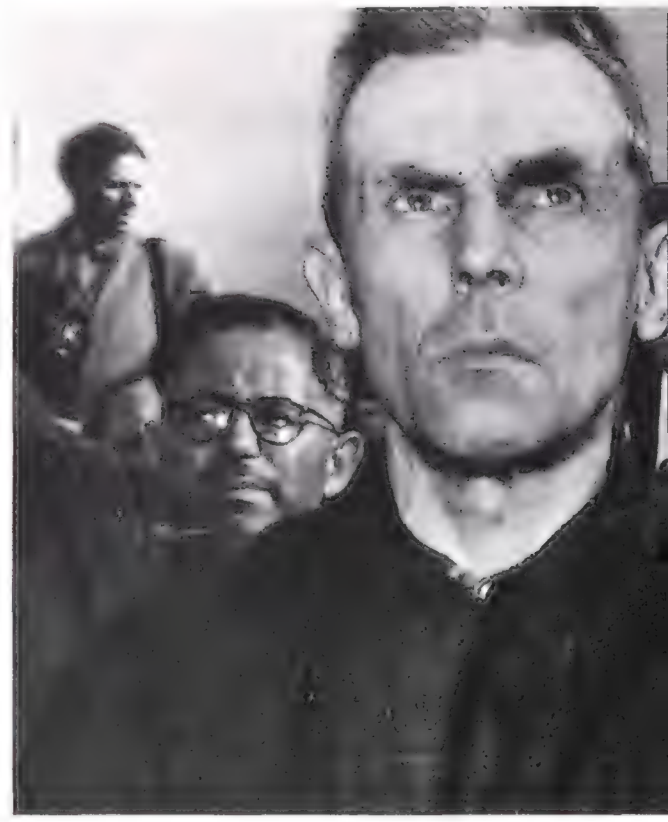

These repatriated soldiers returned to a Germany in which

Poland (formerly known as Allenstein, East Prussia), is a truck driver, married and the father of four children. He speaks and understands only Polish. Ten years ago he wrote the tracing service begging for help in establishing his identity and finding his parents or relatives.

What he knew about himself was pitifully little—scraps of information he had gleaned in the nine different orphanages in which he had spent most of his youth: his approximate year and place of birth; his mother had been shot and killed by Russian soldiers while going out to get milk after the curfew; they had lived between the dairy and the railway depot.

But the scraps sufficed. It took the tracing service almost a decade to put them together and to discover that Jerzy Janczak of Olsztyn was in all probability Juergen Jahnscheck of Liebstadt (now called Milawko) and that he had been the object of a search by an elderly aunt in the mid-1950s. The aunt died long before Jahnscheck wrote to the Red Cross.

"Last December," says Frau Gobmeier, "I was just writing him a long letter with all the details, explaining that though we were certain of his identity, unfortunately we knew of no other close relatives than the aunt who had died. The afternoon mail came in and would you believe it? There was a letter from Heinz Jahnscheck in West Germany asking us

a fourth of the population
was searching for lost kinfolk.

to help him find his nephew Juergen, missing since his mother's death in 1945.

"Call it coincidence, call it luck, but further investigation on our part, exchanges of photographs and letters between the two, left no doubt that they are uncle and nephew. They found people to translate their letters and are now corresponding regularly with each other."

In the early postwar years, despite the confusion and disorganization that filled the vacuum of Nazi Germany's collapse, the hunt was comparatively easy. Hundreds of thousands of POWs and refugees were streaming into the Western occupation zones. To locate the missing was largely a matter of sifting through millions of records and interrogating people at reception camps. But with each passing year, as age dulls memories and decades erase the traces, the search becomes more difficult. Today it is a matter of painstaking scientific research.

Yet, in those cases where doubt and hope remain, the search continues. The tracing service uses extensive publicity to conduct it: a monthly paper filled with the names and photographs of people being sought; daily broadcasts of names and descriptions on five of the West German regional radio networks; posters distributed in all public places such as post offices, railway stations and airports.

The posters, especially, are heartrend-

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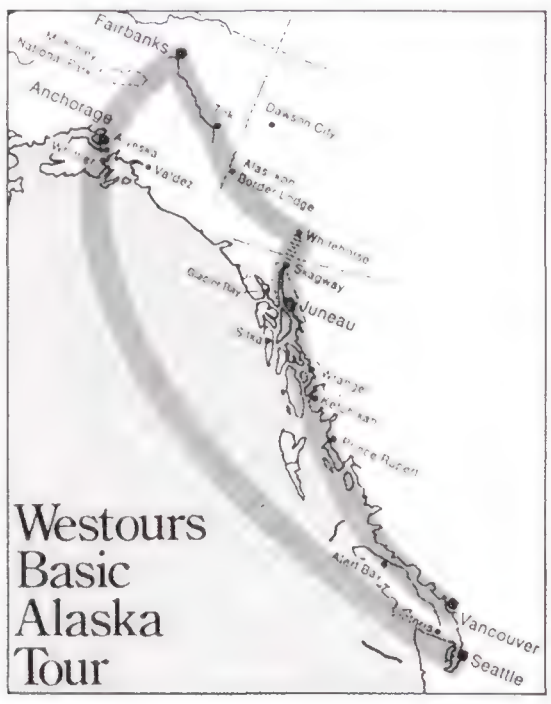

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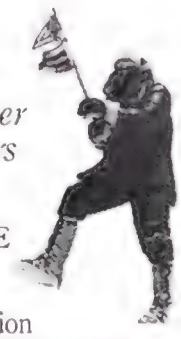

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Foundling 05600.

ing and poignant. "Name unknown," says the caption next to the picture of a handsome, moustached young man called Foundling No. 05600. "He was about four months old when found in May 1945 in a baby carriage in a forest between the villages of Liebtral and Kniedorf in Upper Silesia."

No. 02259 is a picture of a young man with slicked-down hair—the kind of photograph one sees in high school yearbooks. "Name unknown," it says there, too. "Born around 1943. He was found by a soldier in 1945 in a ditch along the road near Braunsberg, East Prussia."

In the 32 years since they first were

The printing shop at the tracing service office is never idle as the search

Foundling 02259.

tacked on the walls of West German post offices and railway stations, such posters have become a common sight. They will continue to be there for many years. Though a grim reminder of the past, the search for the missing has a very long future.

"People may now be writing in Russian, Polish, Czech or Romanian instead of German," says Max Heinrich, "but the message is always the same: Where is . . .? How can I find . . .? Who am I?"

And hopeless as it all might seem, as in the case of Maria Albertowna Logwinenko, born Liesbeth Otto, miracles still do happen.

goes on, producing fliers and posters that appeal for clues to "lost" multitudes.

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Bewigged, begowned and behold: the waxwork figure of William Pitt, Earl of Chatham, in full parliamentary regalia, 1779, by Patience Wright.

Mr. and Mrs. Samuel Schwartz, New Jersey

Henrietta Johnston's winsome portrait of Frances Lambert Moore, 1725.

By Miriam Troop

Two lady artists led the way for success and fame

A little-known fact of history: Mistresses Wright and Johnston were leading Colonial artists

In spite of the furor regarding the place of women in national life, two of America's earliest professional artists—women, as it happens—whose works appeared alongside those of their famed European contemporaries in Colonial drawing rooms, remain virtually unknown. Even the rhetoric of the U.N.'s International Women's Year in 1975 passed Henrietta Johnston and Patience Wright by, regarding them, perhaps as amateurs in a male-dominated profession, hardly worth modern consideration.

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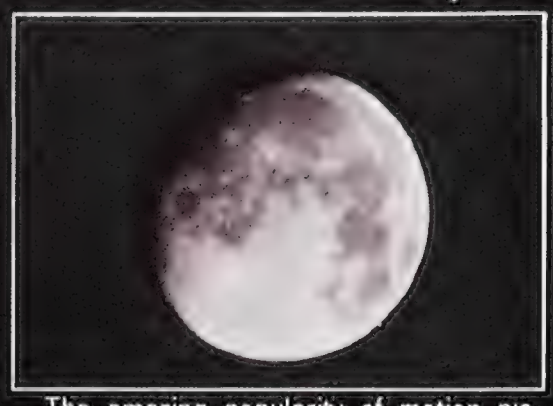

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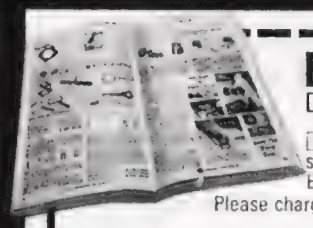

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Patience Wright, London, in 1777—an ardent advocate of liberty.

Henrietta Johnston turned out pastel portraits of the early 18th-century South Carolina aristocracy.

Patience Wright modeled wax likenesses of the notable figures of the Revolutionary era long before Mme Tussaud. They were the earliest women in America's first crop of self-supporting artists.

Some 30 of Henrietta Johnston's portraits still grace homes and museums in and around Charleston, South Carolina, where she and her family settled in 1708.

After the death of her husband in 1716, references to Henrietta become rare. It is known she traveled to New York in the 1720s: several portraits bearing her signature date from there. In any case, by 1727 she was back in South Carolina; in March 1728 or 1729, the year is not clear, the notice of her burial was entered on the register of her husband's old church.

Completely antithetical to the retiring Henrietta was the notorious Patience Lovell Wright. She was professionally active at the peak of the Revolutionary excitement; she was an outspoken American patriot, close to Benjamin Franklin.

Patience Lovell was born in Oyster Bay, Long Island, in 1725. Like Henrietta, she married an older man. When her husband died she was 44; Patience decided to turn

Miriam Troop, a portrait artist herself, is writing a book surveying 400 years of American art and artists.

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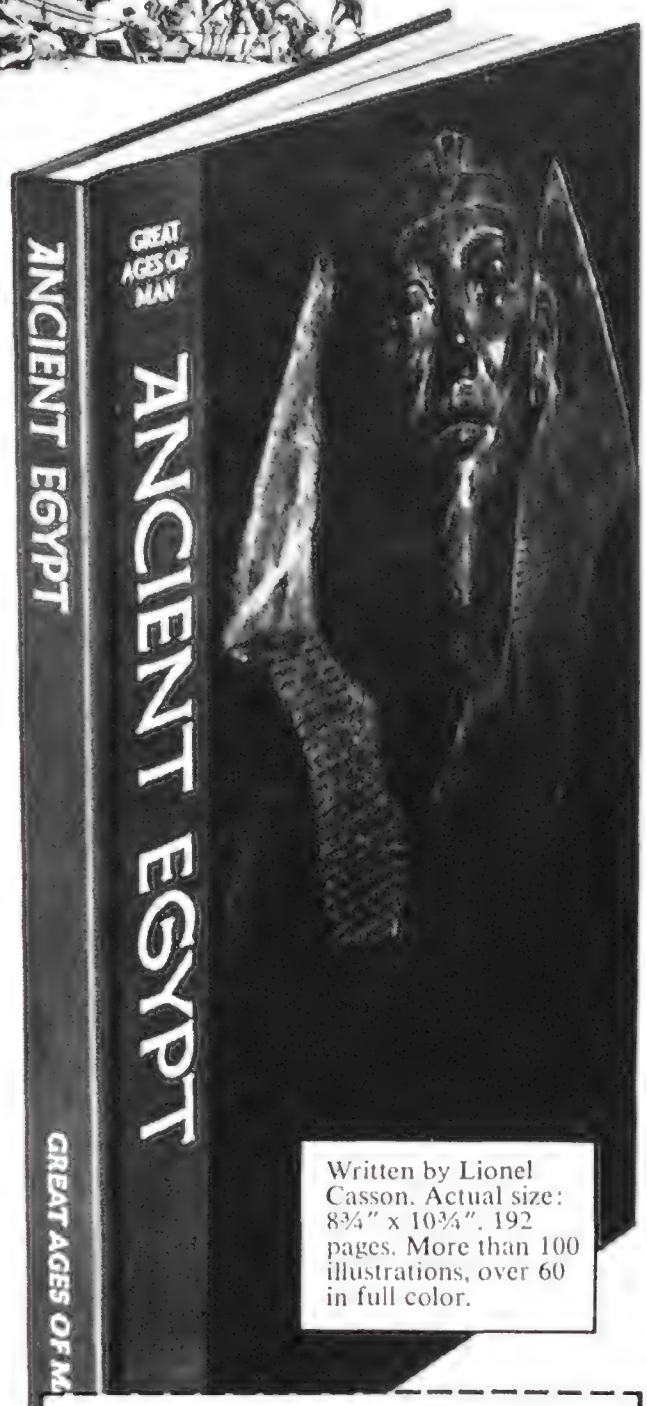

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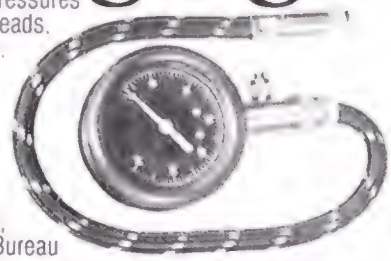

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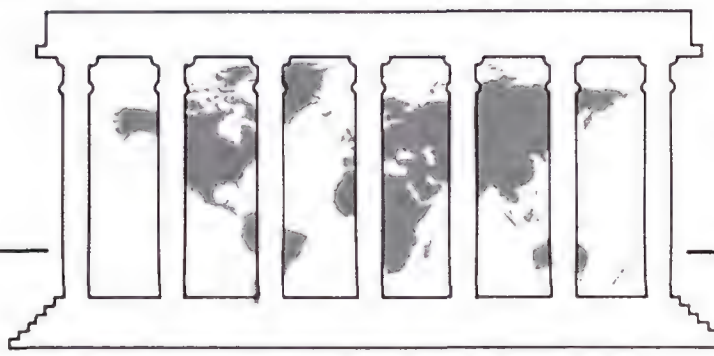

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Portrait of unidentified young woman, c. 1690, by Mrs. Johnston. Miriam Troop thinks it a self-portrait, done as a sample of her work.

a hobby into a living. She and her sister, Rachel Wells, opened a waxworks in New York City, where Patience chose to live, and one in Philadelphia, Rachel's home.

When, in search of commissions, Patience arrived in England in 1772, she quickly found herself the center of much friendly, curious attention.

"A propos to Puppets, there is a Mrs. Wright arrived from America to make figures in wax of Lord Chatham, Lord Lyttleton, and Mrs. Macaulay. Lady Aylesbury literally spoke to a waxen figure of a housemaid in the room," wrote Horace Walpole to the Countess of Upper Ossory in 1773. The English intelligentsia quickly took this odd American matron into their circle.

In 1773 she had made the "bustos," as she called them, of the king and queen.

The friendship between Patience and George III dissolved on the day she publicly reproached him for his American politics. From then the Court was off limits, but this "ardent and avowed rebel," as she described herself to her friend Benjamin Franklin, then in France, had other schemes to keep her busy. The War of Independence had fired every patriotic bone in her body with a zeal to do her part for her country —and for this activity her well-born English acquaintances were more useful than they knew. She began to collect military

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A Huguenot couple, Pierre and Marie Peronneau Bacot, who settled in

information and send it on to Franklin.

In the midst of the political upheaval, Patience continued energetically to ply her trade. The king and the queen were re-formed in wax, as well as the MPs John Wilkes and Isaac Barré, and crowds of other English notables. Her greatest English triumph was certainly the life-sized effigy of William Pitt, Lord Chatham, whose thin face and hawklike features she captured before his death in 1778.

Pitt, the Great Commoner, had thundered his oratory in Parliament for more than 30 years when Mrs. Wright met him: the American troubles had lured him back to politics from an illness-ridden semiretirement. England's great advocate of electoral reform and constitutional rights, Pitt held a vision of Empire that had always included the American Colonies as its strongest element; he was their eloquent champion from the early troubles in the 1760s onward. In 1775, when the first cannonade echoed from Boston Harbor, Pitt summoned the last of his strength to introduce a motion in the House of Lords that the King recall his troops as a first step to a "happy settlement of the dangerous troubles in America." The bill was rejected.

Her Chatham was received with applause in England and later, as a replica,

t of Mrs. J. Insley Blair

Charleston, sat for Mrs. Johnston as did many fashionable residents.

in her sister's waxworks in Philadelphia, where John Adams mentions it. A few months after Chatham's death a figure was commissioned and, dressed in Chatham's own robes, removed to Westminster Abbey, where—refurbished by a thorough cleaning in 1935—it remains.

As the War of Independence ground on, Patience Wright became edgy in London. Her daughter Phoebe was being courted by John Hoppner, one of England's most promising young portraitists —who was also tutoring her son Joseph. Loath though she was to remove her children from such promising social connections, she found that her republican sympathies were increasingly difficult for the once-amused Londoners to shrug off. A publicly exhibited portrait of Mrs. Wright with the head of Charles I in her lap, painted by son Joseph, was the last straw. Scolded the London *Gazette:*

"Wright on her lap sustains a trunkless head and looks a wish—the King's was in its stead!" Phoebe and Hoppner were quietly wed, and Patience prepared to carry out her plan to return to America by way of Paris, with Franklin's help.

"As to the Exercise of your Art here, I am in doubt whether it would answer to your Expectations," wrote Franklin to Patience, to dissuade her from settling in

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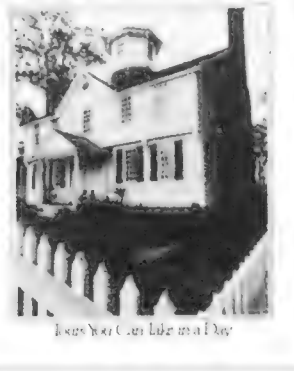

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Colonel William Rhett, in wig, white stock and velvet robe over metal breastplate, a Johnston portrait of the fearsome fighter against pirates.

France. Patience hesitated, then wisely ignored him. With bag and baggage, and not a word of French, she arrived and set up a studio in the Hôtel d'York, popular with Americans.

Here she made friends among her fellow travelers, and a name for herself among the local gendarmerie. Resolved to renew her friendship and model a head of Franklin, she made frequent visits to Passy, an outlying suburb where he was quartered, taking her materials with her. One night she was stopped at the gates of the city, where the guards demanded to inspect her bundle. She demurred, they insisted, and finally the head was unveiled. The police were appalled: not only had this foreign mad woman decapitated an elderly gentleman, but she was attempting to retain his head for other nefarious purposes. Patience's vehement English explanations did nothing to convince them that Franklin was still very much alive. Only the timely intervention of a bilingual fellow American saved the day.

The end of the war enabled Mrs. Wright to return to England, where, disappointed that Dr. Franklin refused to be a coconspirator in a British plot to depose the king, she began to take a new interest in her son's career. Joseph had turned into an able painter, whose work

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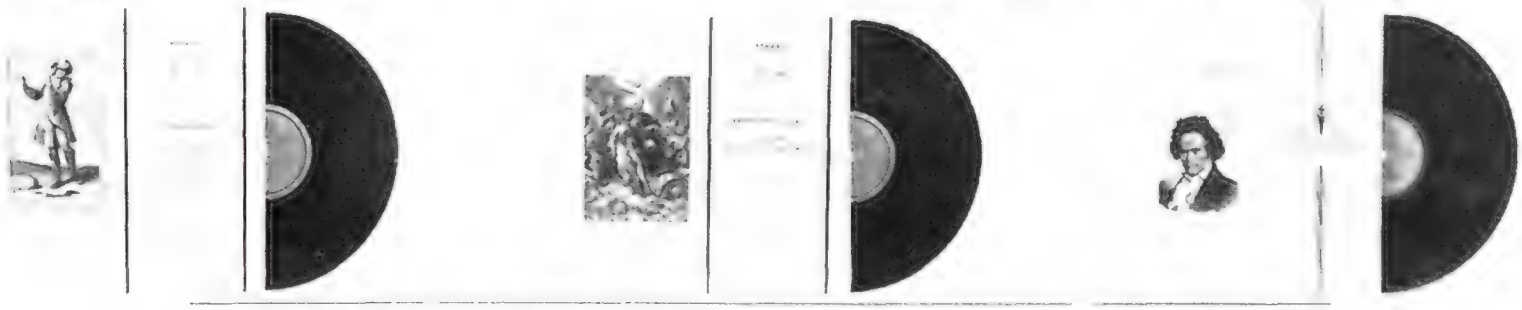

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was good enough to hang at the Royal Academy's annual exhibition. In a letter written to him after he had journeyed to France to paint the portrait of Franklin, among others, she advised him to travel to the United States. There he both painted a portrait and modeled a bust and a bas-relief of George Washington.

On May 16, 1786, New York's *Daily Advertiser* reported, "It is with the utmost regret that we acquaint the public with the death of the celebrated American, Mrs. Wright, occasioned by a fall in returning from a visit to our ambassador, Mr. Adams. . . ." Horace Walpole noted in his journal, "Mrs. Wright from America, who modelled in wax as large as life & in colours died in feb. 1786." Another critic, however, called her "one of the most extraordinary characters of the age, as an artist, and as a profound politician. . . ."

Such, then, were the varied careers of two early professional artists—one who shunned publicity, the other who courted it, both all but forgotten. Henrietta Johnston was undoubtedly the first portraitist to use pastel in the New World. Patience Wright, who brought sculpture to a position in American portraiture in a way unknown before, seems to me surely the Mother of all New Realists, a school which has just within this decade exploded on the American art world as a powerful force.

Article in *London Magazine,* 1775, on the American sculptress who worked in wax, was illustrated with engraving showing Patience Wright at her job.

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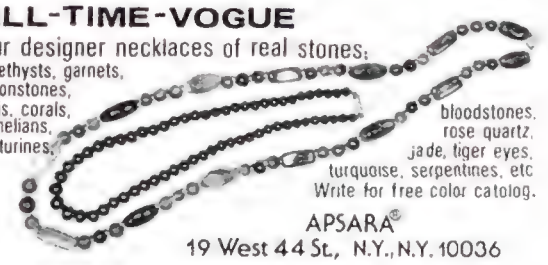

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Jimmy Doolittle by Paul Calle

The National Air and Space Museum has produced a limited edition of 1000 high-quality reproductions of Paul Calle's graphite pencil portrait of Lieutenant General James H. Doolittle. This unique numbered edition measures 19" X 29" and is signed by both Doolittle and Calle. It is the companion print to the Neil Armstrong edition issued earlier.

Calle portrays Jimmy Doolittle in his uniform as Commanding General of the Eighth Air Force and captures his spirit of enthusiasm for aviation in this rare portrait. Jimmy Doolittle is acknowledged to be one of the greatest pilots, the only man to win the three prestigious Schneider, Bendix, and Thompson Trophy Races. As a test pilot and engineer he was a leader in developing the instruments and techniques that enabled pilots to fly "blind," without external visual references.

Jimmy Doolittle became a war hero when he led a group of B-25's on the daring Tokyo Raid, the first U.S. bombing of Japan. He then went on to command the Twelfth, Fifteenth, and Eighth Air Forces. After leaving the military he continued to serve the country on many national committees and commissions.

All profits from the sales will be donated to the *Charles A. Lindbergh Memorial Fund*, which has been established to provide fellowships and grants to deserving individuals in the areas of science which most interested Lindbergh, such as aeronautics, conservation, exploration, and wildlife preservation.

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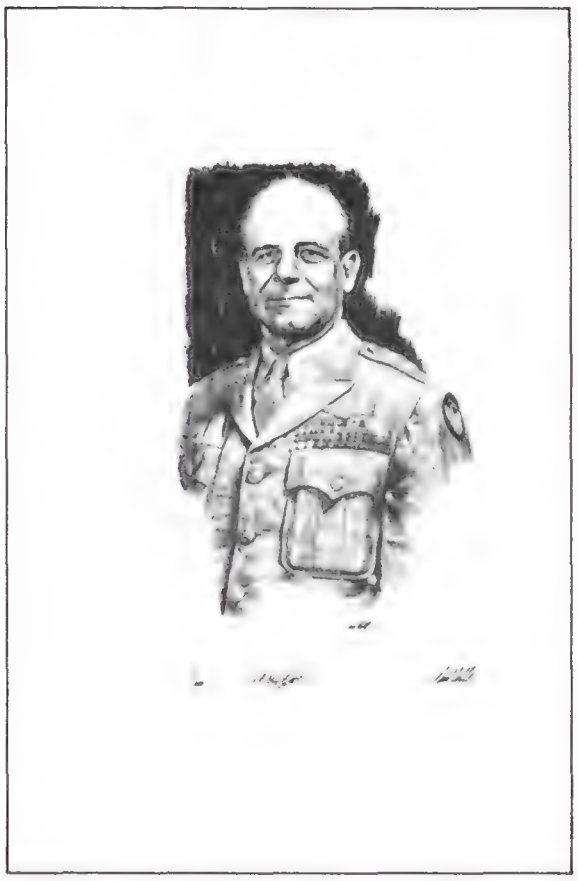

19" X 29" 'Lt. General James H. Doolittle by Paul Calle

' Artist Paul Calle (left) meets with Lt. General James H. Doolittle (Jimmy, right) during the preparation of his portrait

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Book reviews

Alaska Crude: Visions of the Last Frontier
Kenneth Andrasko and Marcus Halevi
(Little, Brown, $7.95)

In his gouty old age Robert Service, balladeer of the gold rush, wondered, "Where are the dames I used to know/ In Dawson in the days of yore?" *Alaska Crude* makes it clear that descendants of Dangerous Dan McGrew and the lady known as Lou still toil and whoop it up along the 800 miles of the shiny new Alyeska pipeline.

Subtitled *Visions of the Last Frontier*, the book conjures up many a Klondike ghost in its rambling text (by Andrasko) and 90 stark photographs (by Halevi). From the North Slope oil wells down to the Valdez terminal, the snaking 48-inch-diameter monster has appreciably altered Alaska's land and ways—for better, for worse. Ecologists, aware that 50,000 gallons of oil a day can seep from the line undetected, can console themselves with knowing that if the heated oil (145 degrees F) ever stops flowing in winter for even 20 days, the line will be deep frozen until summer's thaw. (A Siberian oil pipeline was reportedly knocked out for more than a year by plugged plumbing.)

Adrift in a sea of cross-purposes, the pipeline abuilding was a perennial object of tugs-of-war. The battle was unceasing between Jesse Carr, weighty kingpin of the Alaskan Teamsters, and his natural adversary, Edward L. Patton, top dog of the Alyeska Pipeline Service Company. Legions of sideline superintendents also donned mail to enter the lists. The "ologists"—as the potpourri of attending scholars and scientists was called—kept sleepless vigil, sounding alarm at the drop of an ecological threat. Eskimos and Indians scrambled, often with mere token success, for their hereditary rights in the pipeline job orgy. (Pay was astronomical: a married pair of employees, neither one a skilled laborer, expected to clear $80,000 a year after taxes.)

The watchful "ologists" reportedly put many a costly crimp in the construction trail: a million-dollar detour around a bears' den, a higher-priced zigzag to preserve a parcel of birds' nests. Two surveyors, confronted by a rabid red fox, shot and skinned it. The "ologists" found out. Not only were the surveyors promptly flown down to Fairbanks for painful rabies shots; they also got a $500 fine for poaching (no hunting or firearms permitted within five miles of the right-of-way for the pipeline or its Haul Road). When peregrine falcons were spotted nesting near Prudhoe Bay, wildlife monitors swiftly demanded an 18-mile rerouting of the Haul Road at vast cost. An Eskimo engineer grimly observed: "If a peregrine is worth three-quarters of a million, how much is a [Native] barber in Valdez worth? This is killing *his* life-style, too . . . an entire ecosystem of *people* is disrupted. . . ." Alyeska boss Patton couldn't disagree more: "I don't think the people of Alaska will really know that the pipeline is there, except as a major tourist attraction. . . ."

Accidental death on the job was routine. Author Andrasko terms the human toll "frightening." The serpentine road from Fairbanks up to the Yukon River was dubbed the "Kamikaze Trail." Over its sharp curves and treacherous earthworks careened three 80-foot pipe sections at a time on the truck trailers—60,000 pounds of green steel per haul. Many a driver rolled to his fate with his load to mark his grave. One major contractor fed its first-year mortality figures into a computer. The printout was a shocker: 273 of its employees would die before the pipeline was completed.

The oil is flowing through the pipeline. An army of workers remains, manning the pumps and computers, pursuing other lucrative ends. The descendants of Robert Service's dance-hall dames hoof nightly in Malamute saloons. Coming full circle from the Klondike, some frostbitten worthies even aspire to be the new Doggerelist Laureate. Some of their verses echo hauntingly:

> There's oil up in that frozen north
> No man really knows how much it's worth
> But there's jobs up there and we need the dough
> So we hit the trail of the Eskimo. . . .

—A.M. Hall
Free-lance writer and editor

From the book: a scene from life on the pipeline.

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Mr. Blumenthal's words) "scholarship, artistry, and craftsmanship at the command of the practitioner." And with one exception, *The Printed Book in America* is.

That exception is curious, involving as it does one whose judgment in esthetic matters is usually faultless. Esthetics may vary, but a perfect commingling of beauty and function would seem to be the goal of any bookmaker. Accepting that premise, it is difficult to understand the choice of a broken dash line (the line that one associates with coupons) to frame nearly half of the 70 plates in this book. One could in fact argue against the need for any kind of frame. In any case, the dash line here is both incongruous and distracting, marring an otherwise impeccable display of the artistry of America's premier bookmakers.

When Joseph Blumenthal writes about bookmaking, one presumes scholarship. For half a century he has been an important force in the craft, as an author and designer, as a printer and bookmaker. The Spiral Press, which he founded in 1926, was for 45 years a showcase for Mr. Blumenthal's considerable artistry.

In tracing three centuries of bookmaking in America, Mr. Blumenthal has avoided turning the book into a dreary catalog of names, dates and titles; what emerges instead is a highly readable, personal accounting. Occasionally he enlivens events with a touch of wit. Speaking of the Reverend John Eliot's remarkable translation of the Bible into the Algonquian tongue in 1663, so that the Indians would, in Eliot's words "be the Lord's people, ruled by Him alone in all things," Blumenthal wryly muses that "one may hope [the Indians] were well received in some Christian heaven where all souls enjoyed the same color of skin."

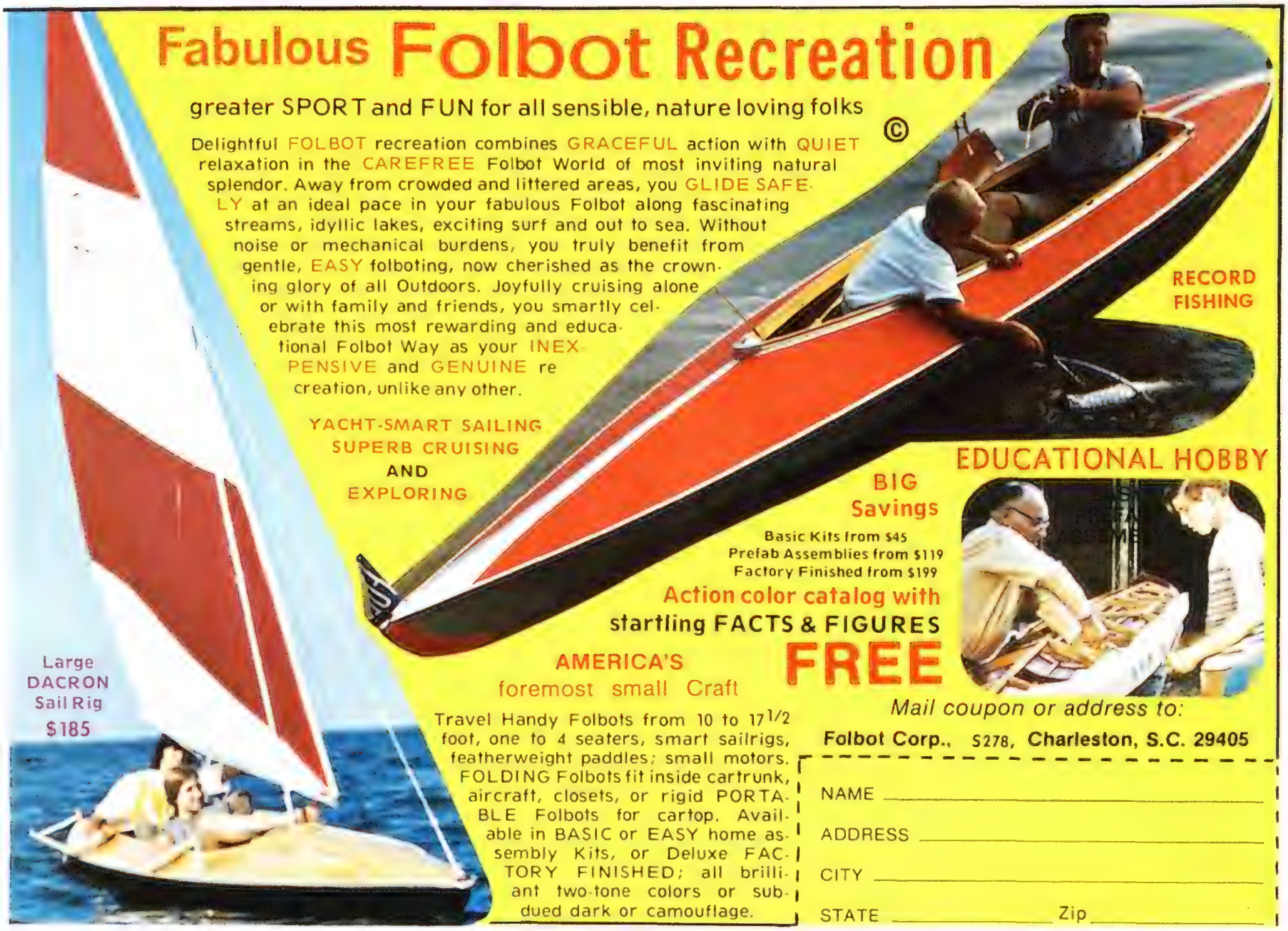
Mr. Blumenthal also makes painfully clear just how laborious printing of any kind—whether or not done with an eye to esthetic appeal—was in the years before the Industrial Revolution. Handpresses and limited amounts of type meant that producing a book was an immense undertaking—four years for the 700-page *Laws of Maryland*, for example.

And what of bookmaking in America since the Industrial Revolution? Did the practitioners succumb to the typesetting machines? No indeed. Rather, the best of them, starting with Bruce Rogers in 1895 and continuing on through Goudy, Dwiggins and Blumenthal himself, have been able to control the machines and retain their own sense of artistry. And that tradition is being carried on by their heirs, represented by Andrew Hoyem, K. K. Merker, Edna Beilenson and Roderick Stinehour (the printer of this book). But that fine printers will always be found is no surprise to Mr. Blumenthal. "The art of the book," he writes, "one of the slender graces of civilization, works its charms on each new generation."

—John F. Warner
Boston-based writer and editor

The Provoked Wife: The Life and Times of Susannah Cibber
Mary Nash
(Little, Brown, $12.50)

Eighteenth-century theater-goers were partial to the sentimental "she-tragedy," a dramatic form in which a beleaguered wife either dies or reforms a dastardly husband. *The Provoked Wife* was an ex-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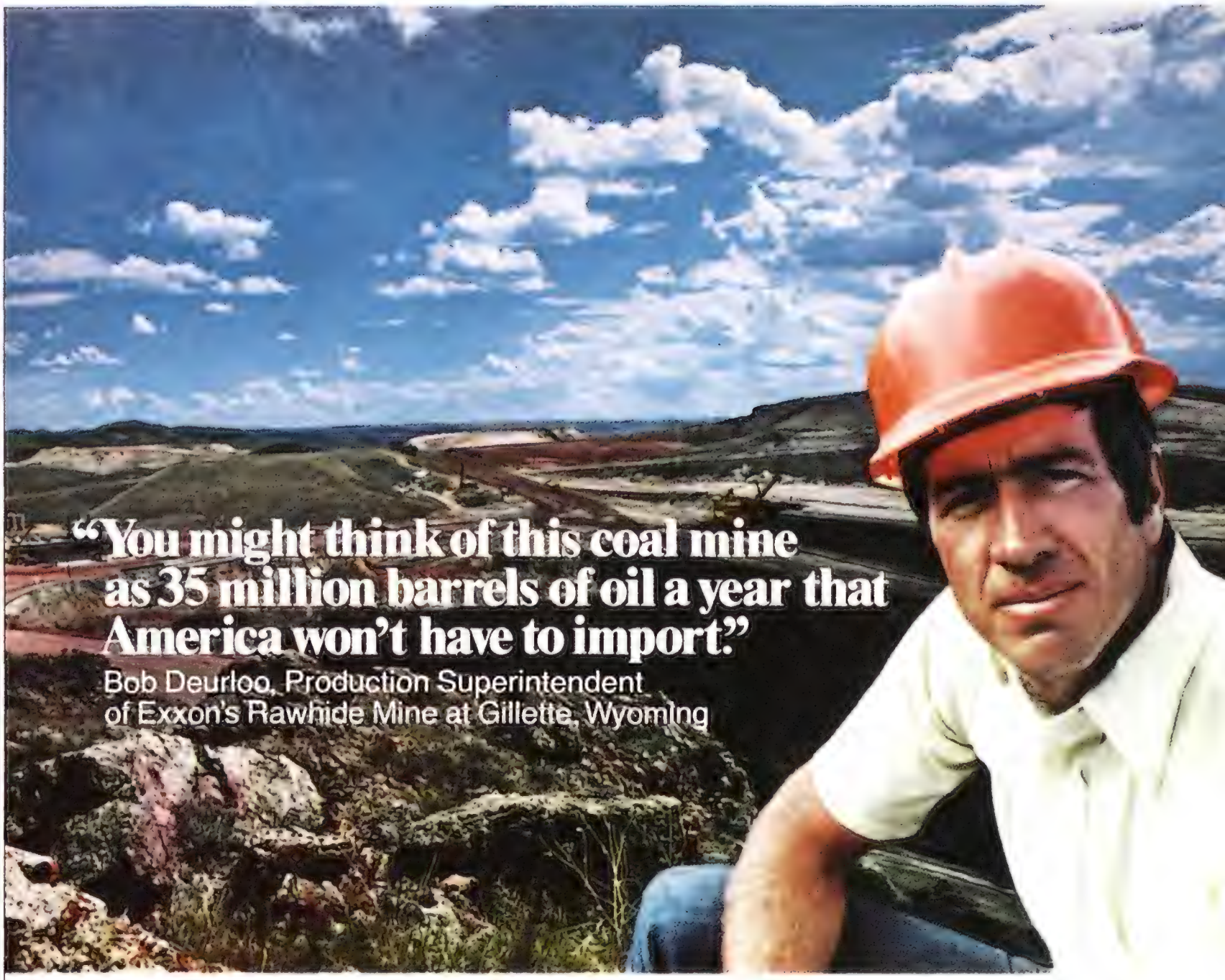
"You might think of this coal mine as 35 million barrels of oil a year that America won't have to import."
Bob Deurloo, Production Superintendent of Exxon's Rawhide Mine at Gillette, Wyoming

America's vast coal reserves—an energy resource that is being developed now to help meet our country's growing energy needs.

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In addition to our new surface mine at Gillette, we have been operating a 3-million-ton-a-year underground mine in Carlinville, Illinois since 1970, and we have just opened a new underground mine at Albers, Illinois which will produce 3.6 million tons a year. Soon, we will be opening a third underground mine near Huntington, West Virginia and a second surface mine in Wyoming. With these mines Exxon will have the capacity to produce more than 20 million tons of coal a year, the energy equivalent of about 3 days' supply of oil for America.

Exxon is working on ways to make better use of our country's huge coal reserves—research into better ways to mine coal, better ways to burn it, and new ways to convert it into clean-burning synthetic gas and liquid fuels.

Our coal development is part of Exxon's activities to find and to supply more energy for America, from America.

ample of another genre, in which the wronged wife, defying her brutal husband, finds solace in a gentle lover.

The great British performer Susannah Cibber frequently played that lead throughout her career. She played the role in life as well. Susannah had been raised to be a bourgeois gentlewoman. But when her entrepreneur father realized that his unscrupulous son Thomas Arne (*Rule Britannia*) was actually *paid* for his music, he put his sweet-singing, ladylike daughter on the stage as well. It was there that Theophilus Cibber fell in love with her.

Theo Cibber played onstage and off the role of the insinuating fool, the low comic actor of obnoxious excess that one laughed at, not with. His father Colley Cibber had exercised his gift of ingratiation at the best tables in the land, and had become poet laureate for his trouble. Theo exercised *his* gifts in "a nightmare career of public self-abasement."

Cibber had already worked one wife to death when Susannah came along.

Constantly in and out of debt (and jail), Theo encouraged an affair between his wife and William Sloper, the young country gentleman who was infatuated with her.

The arrangement only broke down when the lovers tried to separate from Theo. Once Theo realized he was losing his most precious possessions, his wife's salary and Sloper's beneficence, he hired a snoop to spy on their love nest and then sued Sloper for what would amount to about $200,000 today.

It was Susannah Cibber's fate to become the most sought-after actress of her time (and the best-paid at prestigious Drury Lane) because the genteel theatergoer identified her personal tragedy with the roles she played on stage.

The final consolidation of her tragic life—besides Sloper and their one surviving child—*was* the tragic stage.

Her last and worst performance of *The Provoked Wife* was by command of George III. Gravely ill, the actress valiantly struggled through the evening, to collapse only after the curtain fell. It is not only an ironic coincidence, but a monument to Susannah Cibber's own unyielding artistic intensity, that the suffering actress was carried from the theater to her death.

—Julia Markus

Author of the forthcoming novel *Uncle*

Beginnings of Sisterhood: The American Woman's Rights Movement, 1800-1850
Keith E. Melder
(Schocken Books, $11.95)

Let Them Speak for Themselves: Women in the American West, 1849-1900
Edited by Christiane Fischer
(Archon Books, $15)

There are different kinds of history and different kinds of history books, and when they complement each other they give us a broader, more realistic view of the past. Of these two books on women's history, one presents widely known women, the other unknown ones; one analyzes the growth of the woman's movement in the first half of the 19th century, the other lets women themselves describe their travels westward in the second half. Keith E. Melder retells the story of organized demands for women's rights; Christiane Fischer's excerpts from diaries, journals, letters and oral histories show how individual circumstances could also lead women to shape conceptions of their role.

For both historians, essential "bonds of sisterhood" grew out of the ideology of woman's "appropriate sphere," which was increasingly imposed on women from the beginning of the 19th century onward and tied them to the home as wives, mothers and preservers of culture. The history of the women's movement in this country, as Melder sees it, was a reaction against the ideology and a transformation of those female bonds, while Fischer's book reveals how the creed, brought out to civilize the West, was often changed in the process.

According to Melder, a former assistant curator of the Smithsonian's Division of Political History, what has elsewhere been called "the cult of true womanhood" was the product of changes in American society from the 18th century to the 19th. Without making the common mistake of segregating the history of women from the rest of society, Melder intelligently traces the development of a "female network" fostered by activities like the seminary movement in education, religious revival and temperance reform, benevolent societies, the professionalization of some women in journalism and literature, and, finally, abolitionism. Reinforcing traditional family and friendship ties, this alliance led to forms of collective identity which gave meaning to women's lives and also a new sense of individuality.

These women, as Melder admits, were primarily middle class and educated, but he widens the picture by a fine job of geographical representation, discussing events in the Middle West as well as the East, describing large communities and smaller ones.

Melder's chain of events deals in groups; the accomplishment of Christiane Fischer, who teaches American Studies at the University of Nancy, in France, has been to bring together a series of extraordinary individuals whose writings and life stories are some of the most exciting to come along in print in some time. Her book leaves behind the frontier of political activism for the real frontier, where women were seen—and saw themselves—as symbols of settlement, harbingers of civilization. Usually, however, they were forced to modify their assumptions and adapt to new ways; *Let Them Speak for Themselves* is a vivid record of improvisations. Paradoxically, these women, who were thought to embody tradition and domesticity, emerge as less conservative than their men. They were anxious to learn from the land and from its original or earlier inhabitants; they took a practical stance on moral questions; they even found time to admire the "grandeur" of the landscape around them.

The only consistent ideology was that of survival, of trusting in God in the face of innumerable tragedies and always seeing the sunny side, of maintaining faith in such institutions as the family as all other sureties crumbled. Fischer groups her women according to common experiences of city or ranch life, working women and army wives, travelers and the residents of mining towns. Some used Biblical language to describe their experiences, others indulged in the melodramatic, sentimental, flowery prose style of the time, and there is a great deal of laconic humor as well. Hardy practitioners of the Puritan ethic, they became both conscious and unconscious feminists as new tasks and ethical duties were demanded.

Whether acidly commenting on fashions or criticizing racism, these women are more than capable of speaking for themselves. Their homesickness was channeled into writing and directed to people back home, but just as often it tried to reach (and does) another audience: us.

—Celia Betsky

Smithsonian Fellow, free-lance critic

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Additional reading

Trans-Siberian railroad (p. 36)

Gateway to Siberian Resources (The BAM) by Theodore Shabad and Victor L. Mote, Scripta Publishing Company (Washington, D.C.), 1977

Basic Industrial Resources of the USSR by Theodore Shabad, Columbia University Press, 1969

To the Great Ocean by Harmon Tupper, Little, Brown and Company, 1965

The Great Railway Bazaar by Paul Theroux, Houghton Mifflin Company, 1975

Mud and guts (p. 48)

The Book of The Continental Soldier by Harold L. Peterson, Stackpole Books (Harrisburg, Pennsylvania), 1968

The Spirit of 'Seventy-Six, edited by Henry Steele Commager and Richard B. Morris, Harper & Row, Publishers, 1967

A Military History of the Western World by J.F.C. Fuller, Funk & Wagnalls, Inc., 1955

The American Heritage Book of the Revolution, edited by Richard M. Ketchum, American Heritage Publishing Co., Inc., 1971

Waves (p. 60)

Wind Waves by Blair Kinsman, Prentice-Hall, Inc. (Englewood Cliffs, New Jersey), 1965

Ocean Waves by Vaughan Cornish, Cambridge University Press (London), 1934

"Freak ocean waves are episodic" by James Dawson, *New Scientist,* January 6, 1977

Polar bears (p. 70)

The Great White Bears by Robert W. Nero, Manitoba Department of Renewable Resources and Transportation Services (Winnipeg), 1971

"Polar Bears," Proceedings of the Fifth Working Meeting of the Polar Bear Specialist Group, International Union for Conservation of Nature and Natural Resources, Morges, Switzerland, September 1976

"Population Ecology Studies of Polar and Grizzly Bears in Northern Canada" by Ian Stirling, Arthur M. Pearson and F. L. Bunnell, Transactions of the 41st North American Wildlife and Natural Resources Conference, Wildlife Management Institute, Washington, D.C., 1976

Stained glass (p. 82)

ludwig schaffrath by Konrad Pfaff, Scherpe Verlag Krefeld, 1977

"New Stained Glass in Germany" by Robert Sowers, *Craft Horizons,* May/June 1969

"Ludwig Schaffrath: An Architectural Approach to Stained Glass" by Ed Carpenter, *Glass Art Magazine,* October, 1975

"Ludwig Schaffrath Discusses His Work," *Glass Art Magazine,* October 1975

Underwater archaeology (p. 92)

A History of Seafaring Based on Underwater Archaeology, edited by George F. Bass, Walker & Company, 1972

Archaeology Beneath the Sea by George F. Bass, Walker & Company, 1975

Archaeology Under Water by George F. Bass, Penguin Books, 1970

"Cape Gelidonya: A Bronze Age Shipwreck" by George F. Bass, Transactions of the American Philosophical Society, Vol. 57, Part 8, 1967

Diving for Treasure by Peter Throckmorton, The Viking Press, 1977

Colonial artists (p. 114)

Henrietta Johnston by Margaret Simons Middleton, University of South Carolina Press, 1966

Patience Wright by Charles Coleman Sellers, Wesleyan University Press (Middletown, Connecticut), 1976

Women Artists: 1550-1950 by Ann S. Harris and Linda Nochlin, Los Angeles County Museum of Art and Alfred A. Knopf, 1976

Exploring the World with the Smithsonian

For both the seasoned and would-be traveler, the Smithsonian has developed a travel program to meet a variety of tastes and budgets. In order to accommodate the increasing growth and interests of Smithsonian Associates, the tour programs have expanded, bringing travelers to places reflecting the Institution's interests.

Three types of trips are available, Charter, Domestic and Study, each with its distinct character. Foreign Study Tours provide small groups with culturally oriented, specialized trips, under the guidance of museum curators or experts in respective fields. Foreign Charter Tours, consisting of several small groups under the leadership of skilled guides and interpreters, are lower in cost, combine study, discovery and vacation. Domestic Tours offer specialized guidance and expertise generally unavailable to persons traveling on their own.

Foreign Charter Tours

Mayan Mexico: The Yucatán Peninsula—November 10-22 or December 2-14: A complete tour of the extraordinary Mayan ruins of the Yucatán. (Originates in Mérida.)

Guatemala—November 1-11 or November 22-December 2: In the company of an archaeologist, visit Tikal, the monumental Mayan city of the Petén jungle; Copán, a Mayan site deep in Honduras; plus the ruins of Quiriguá, El Baúl and La Democracia. (Originates in Guatemala City.)

Italy—May 1-15: Walking tours and special visits in Rome to explore the history and arts of the Eternal City and to capture the essence of its modern life. Choice of travel seminars to Florence, Venice or Campania.

Paris and Provence*—May 15-29 or September 4-18: Paris plus Avignon, Arles, Nîmes, and Aix-en-Provence; seminars at the Louvre and the new Pompidou center.

Scotland*—September 25-October 9: Edinburgh and beyond—a program of walking tours and special visits in Edinburgh: castles, abbeys, battlefields, archaeological sites plus incomparable scenic beauties of rugged mountain glens and rolling hillsides through the Highlands and Lowlands of Scotland.

The Caucasus: Armenia, Azerbaijan and Georgia*—October 9-23: The spectacular mountain scenery of Transcaucasia; the ancient cities of Erevan, Tbilisi and Baku; medieval churches and mosques; the Caspian Sea and mountain fortresses.

New Zealand and Fiji—November 17-December 4: Enjoy diverse delights of New Zealand's glaciers, thermal springs, tropical foliage and fjords. Stop in Fiji. Trip begins in Los Angeles.

Low cost of tours includes first-class hotels, most meals, sightseeing, lectures, theater tickets and air fare. *Optional predeparture course will be available. Write Smithsonian Associates Travel Program, A&I 1278, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635 for details.

Domestic Study Tours

Virgin Islands Adventure—March 31-April 9: Explore the British and U.S. Virgin Islands by chartered sailboat to learn about the spectacular natural history in these warm, tropic waters.

Big Bend National Park—April 29-May 6: A nature tour of this Chihuahuan Desert wilderness park in southwest Texas.

Chicago—May 10-14: Discover the architectural treasures of this vibrant city with walking tours and lectures. Visit the Art Institute and the theater.

The Magnificent Tetons—June 1-11: In cooperation with the Teton Science School, explore the beautiful backcountry of the National Park.

Shenandoahs—June 3-10: A study of this beautiful area and its geology, archaeology and social history.

Arts and Crafts of the Southwest—June 23-July 1: Study influences of the Indian, Anglo and Spanish cultures on traditional and modern arts of New Mexico. Lectures, demonstrations, museum, gallery visits.

Bristlecone Pines of California—July 15-24: Enjoy a camping trip in this wilderness area of east Yosemite, complete with the oldest living trees.

Desolation and Gray Canyons—July 23-August 2 and September 29-October 9: A white-water trip for the adventurous; explore Utah's Green River.

Wind River Mountains—July 23-August 6: A horseback trip into the land of mountain men. Camp at 10,000 feet above sea level in the midst of turquoise lakes and high-meadow wild flowers.

Williamsburg Family Weekend—August 10-13: A repeat of our popular program for children ages 6 through 14 (and their parents) to learn about 18th-century life through participation in special tours and Colonial crafts.

Washington "Anytime" Weekend—Visit the nation's capital and tour the original Smithsonian building.

For information write Smithsonian Associates Travel Program, A&I 1278, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635.

Foreign Study Tours

Himalayan Cultures—March 4-27, 1978: Delhi, Agra, Calcutta, Darjeeling, Nepal, including tigers and Everest viewing, and Bhutan for a five-day exploration.

Gods and Gardens in the Western Mediterranean—April 29-May 15, 1978: Cruise on MTS *Argonaut* from Rome to Lisbon, visiting Roman and medieval centers of civilization in northern Italy and France, Barcelona's museums and architecture, Moorish Spain and Tangier. The guest lecturer will be A. Hyatt Mayor, Curator Emeritus, Print Department, Metropolitan Museum of Art.

Thomas Jefferson in England and France—July 9-30, 1978: His travels retraced, with emphasis on country houses and gardens he admired; led by Professor Frederick Nichols of Charlottesville.

Aegean Sites of Civilization—October 7-29, 1978: A cruise on MTS *Argonaut* with Dr. Richard H. Howland, including Thrace, Istanbul, Troy, Ionia, Mt. Athos, Mistra, Thera, Crete and principal classical sanctuaries, leaving from and returning to Athens. *Optional prelude may be the following:*

Nostalgic Orient Express—October 2-8, 1978: Vintage cars restored to superb condition, over original Simplon routing from Zurich to Athens.

For detailed information write Miss Bliss Schumann, Foreign Study Tours, S.I. 123, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5520.

Smithsonian highlights

February Openings

Aspects of Art and Science
The Museum of History and Technology will be exhibiting a collection of about 50 objects gathered from American and British museums which emphasize the interdependence of science and art. The show opens on February 14.

The Frederick Douglass Years
To celebrate "Black History Month," the Anacostia Neighborhood Museum opened a show February 1 on the life of Frederick Douglass. The exhibit, including 42 panels of photographs, silkscreen and text, continues through April.

Mary Cassatt: Pastels and Color Prints
This show of 48 pieces opens at the National Collection of Fine Arts on February 24 and continues through April 30 (see right).

Continuing Events

Museum of History and Technology
"Atom Smashers: Fifty Years": the history of high-energy particle accelerators.

National Collection of Fine Arts
"New Ways With Paper," a show of 50 objects which expand the traditional concepts of paper uses in art, continues.

Renwick
"French Folk Art," through June 4.

Museum of Natural History
The curators' selections of the museum's most beautiful objects are together for an indefinite stay—"Splendors in Nature" (see SMITHSONIAN, November 1977).

Musical Weekend in May
The Seventh Annual Musical Weekend in Washington, sponsored by the Division of Musical Instruments and the Friends of Music at the Smithsonian, will be held May 12, 13 and 14. Reservations are being accepted for this event, which opens with cocktails and dinner in the historic Smithsonian castle, followed by a performance of the New York City Opera in the Opera House of the Kennedy Center. On Saturday guests will be introduced to the Smithsonian's world-famous collection of musical instruments and offered a tour of private Washington gardens, with tea and music at the Embassy of Iran.

Hotel accommodations for two nights and meals are included. For information, write: Musical Weekend, Room 4123, Museum of History and Technology, Washington, D.C. 20560.

Division of Performing Arts and Musical Instruments
- Count Basie, great pianist and a musical institution, February 5, Baird Auditorium, Museum of Natural History, 8 P.M.
- Music for Oboe and Recorder, with works by Bach, Handel and Telemann, will be performed on February 13 in the Hall of Musical Instruments, Museum of History and Technology, at 8:30 P.M.
- Dance of Sri Lanka will be portrayed in film and lecture on February 16 at 8 P.M. in Baird Auditorium, followed on February 17 at 8 P.M. with a performance of ritual chanting, dance and the drumming of exorcism.
- Country Music and Dance will bring the Luke Smathers' Swing Band to the Hall of Musical Instruments, February 17 at 8 P.M.
- The Theater Chamber Players will perform on February 27 at 8:30 P.M. in Baird Auditorium.

Hèlène De Septenil by Mary Cassatt

Regional Program in Houston

The Smithsonian National Associates Program travels to Houston to bring activities to that city from February 7 through 19, with the aid of the Houston Museum of Natural Science and the Contemporary Arts Museum. Events scheduled for Houston include:
- The Smithsonian Chamber Players directed by James Weaver, associate curator of the Division of Musical Instruments, will perform baroque and classical music on antique instruments and conduct a series of workshops on instrument making and musical performances. A special young people's concert will include baroque music chosen especially for Associates under 15 years old.
- Kjell B. Sandved, Smithsonian photographer and filmmaker, will present his film on insect behavior and conduct photo-technique sessions for Associates. His nature-photography exhibition, "Beyond the Ocean, Beneath a Leaf," will be displayed at the Houston Museum of Natural Science.
- Paul Garber, historian emeritus and Ramsey Fellow, National Air and Space Museum, will lecture on milestones of aviation history.
- David Challinor, Assistant Secretary for Science, Smithsonian Institution, will discuss the range of scientific research at the Institution.
- Frank Greenwell, Division of Mammals, Museum of Natural History, will explore the world of "Night Creatures," including reptiles, insects and mammals who sleep by day and feed by night.
- Representatives of the Smithsonian's

Family Folklore Program present an exhibition, lecture, films and workshops on folklore of Houston area families.

National Associates in the Houston area should have received invitations by February 1. For further information, call: (202) 381-6491.

Smithsonian Institution Traveling Exhibition Service

SITES has been organizing and distributing exhibitions in the field of art, science and history for 25 years. For information about a show, write: Eileen Harakal, Smithsonian Institution, Washington, D.C. 20560, or call (202) 381-6631.

- San Jose, California—"Photographing the Frontier" will open at the San Jose Historical Museum on February 1, through March 31.
- Salisbury, Maryland—"Frederick Douglass Years," in honor of "Black History Month," opens at Wicomico Council of Arts on February 18, through March 19.
- Tampa, Florida—"Belgian Gunmaking and American History" will appear at the Tampa Bay Art Center from February 4 through March 14.
- Wisconsin Rapids, Wisconsin—"Witness to Our Times: Photographs by Alfred Eisenstaedt," McMillan Memorial Library February 11 through March 12.

Associates Reception in Washington

From 10 A.M. until 4 P.M. daily, Associates are greeted in the original Smithsonian Institution Building—the old red castle on the Mall. Here members are invited to register, receive special orientation materials and relax in the Associates Lounge. Misplaced membership cards are replaced upon presentation of a SMITHSONIAN magazine address label.

Associates may write or phone for information packet: Associates Reception Center, Smithsonian Institution, Washington, D.C. 20560 or phone (202) 381-6264.

Members Dining Room

The Court, the Associates dining facility, is located in the Museum of Natural History. A buffet luncheon is served seven days a week from 11 A.M. to 3 P.M., priced at $3.95 for adults and $2.95 for children. A hearty breakfast is served weekends only, 8:30 to 10 A.M., priced at $2.95 for adults and $1.95 for children.

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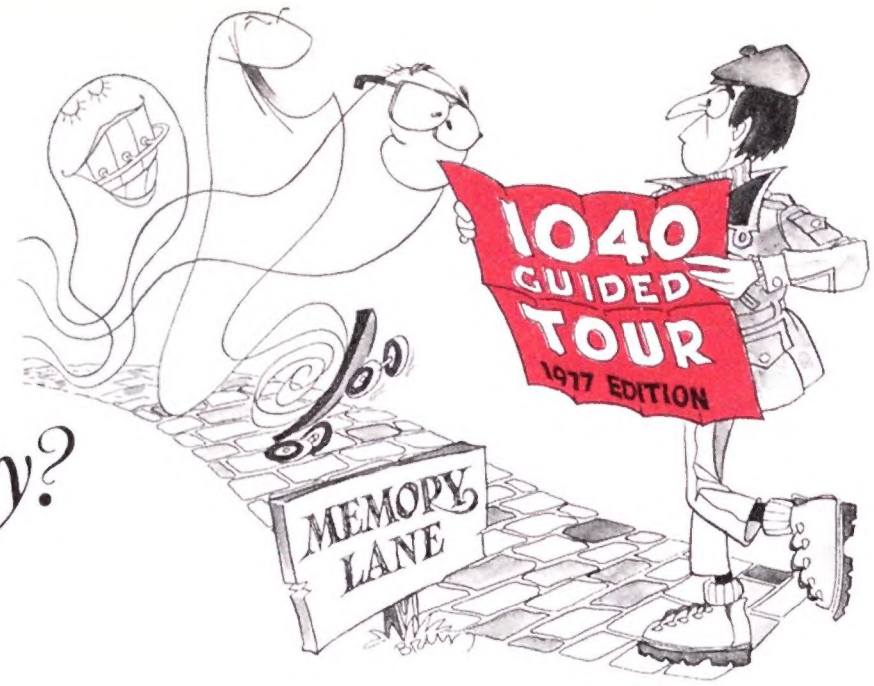
By William Zinsser

Recap of 1977: who was pultruded, anyway?



I'm sitting up tonight working on my income tax return for 1977. The year itself is gone beyond retrieval, its door closed. But I am trying to piece it back together one more time, peering at old sales slips and checkbook stubs to see who walked through my life during those 12 months and who can be, if not fondly recalled, at least fondly deducted.

I am making various lists of income and outgo. Some of the names scribbled in my checkbook are as dim and distant as snapshots taken in childhood. Who is American Pultruded Products and what products do they pultrude? They seem to have sold me two ACS 430 trucks with loose-ball axle extenders and a cutaway camberkick. I remember now: skate-boarding equipment for the birthday of a skate-boarding son. Definitely not deductible.

On one sheet of paper I'm adding up doctors. To make an annual list of medical payments is to be reminded not only of the thin edge of mortality on which we perch, but of a family's passage through the seven ages of Man. I see, for instance, that I made my final payments to Don B. Fenster, D.D.S. What they tell me is that both of our children have now journeyed through the wiry world of orthodontia and come out alive.

It seems only yesterday, though it was seven taxable years ago, that I went to Dr. Fenster's office to be initiated into the arcana of his trade, which he was about to ply on our daughter Amy. I sat across from Dr. Fenster—who has such perfect teeth that it is hard to look him in the eye—and he held up before me a plaster set of uppers and lowers.

"This is Amy," he began. It didn't look like Amy to me, but maybe I'm just a prejudiced father. "You'll notice that she isn't interdigitating properly," he said. "She'll need accessory appliancing." I went out to seek accessory financing, and that's how it all started. Now the book is shut, everyone is biting nicely, and Dr. Fenster is driving a car that costs $18,000. I see him in it occasionally as I walk around town, and he always waves, his smile as agleam as the silver appliancing on his wheels. I am well satisfied with the bargain: he has fulfillment and we have interdigitation.

Glenn S. Wilson, D.D.S. The list of entries under his name is long and dismal—replacements and fillings and crowns. It conjures up a year when porcelains washed away (possibly out to sea), when root canals refused to be filled, and for the first time teeth were put into my head that are not my own, though only Dr. Wilson and I know which ones they are, so cunningly did he match them to the ones God gave me and is still letting me keep.

But for how long? As the dental hygienist says when she does her quarterly scraping, "We have a lot of tartar." I assume that she is using the medical "we" and not trying to get me to ask her about her own tartar. She has recommended a special toothbrush "for optimum control of plaque"—a word that she sometimes uses for whatever it is that she is scraping, just as the session itself is billed as "prophylaxis," probably because it sounds less repulsive in Greek. I am using the toothbrush faithfully in 1978. Plaque and I will fight for the rest of my taxable life.

The list lengthens, every name nudging me with a metabolic truth that I accepted philosophically in 1977 and didn't want to be reminded of again. Roger F. Judd, M.D. ("It happens to everybody's eyes at this time of life"). Stanley Potter, M.D. ("The cartilage around the knee just wears away—a guy like you who plays a lot of sports"). Roy M. French, M.D. ("I'm tired, too"). Dr. French is my G.P., or maybe my internist—anyway, he's the person who used to be called the "family doctor." I see that I went to him for an annual checkup, though 1977 was the year when annual checkups were declared in various magazines to be a waste of time and several famous people dropped dead the day after being pronounced fit as a fiddle. So much for the fitness of fiddles.

Still, there is comfort in Dr. French's belief that nature knows what it is doing and shouldn't be badgered by Man. "It'll go away," he tells me if I telephone, and it does. He is just enough older than I to have all my symptoms and to assure me that they are merely the normal depreciations of time.

I have miles to go on Form 1040 before I sleep. There are many lists in many categories to be compiled—the wins and losses and earned-run averages of 1977 to be totted up and pondered for what they may tell me about how to arrange my present and future baggage.

Form 1040 is the most sinuous road that I will drive in 1978, but I don't begrudge the traveling time. I don't even mind that I have so many doctors along on the trip. This annual rendering of accounts to the Internal Revenue Service is also a moment to make a larger rendering to myself and to be grateful that for still another calendar year the routine indignities of life were small ones.

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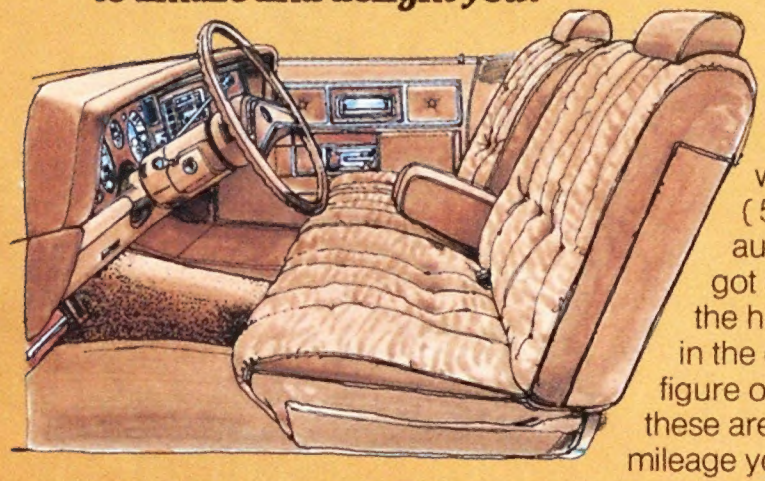

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